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ON GUARD FOR PEACE AND THE BUILDING OF SOCIALISM

The 24th CPSU Congress gave high praise to the state of the Soviet Armed Forces. This assessment rang with great persuasiveness in a statement by General Secretary of the Central Committee CPSU L. I. Brezhnev: "Soviet citizens can be confident that our glorious Armed Forces are ready at all times, day and night, to repulse an enemy attack, from whatever quarter it might come." This is the finest testimonial to our military cadres, army and navy Communists, who are investing enormous labor in the cause of ensuring the security of their socialist homeland.

As all revolutionary experience, the military experience of the CPSU is extremely multifaceted. It has confirmed the historical correctness of Leninism, Leninist doctrine on armed defense of the socialist homeland, and the superiority of the socialist military organization over the capitalist. The party has created such an organization in the person of our Soviet Army and Navy. This is the reliable shield and sword of socialism! The history of our state attests fairly eloquently to the fact that the Soviet people, guided by the Leninist party, and its Armed Forces are capable of standing up for their righteous cause. They have achieved great victories over our enemies because in this struggle they have relied on knowledge and utilization of the objective laws of war revealed by Marxism-Leninism.

CPSU guidance has been and remains a vital foundation for the activities of the Soviet Armed Forces, a guarantee of their combat might. Even today the CPSU is focusing the closest attention on creative development of Marxist-Leninist military theory. The party attaches primary significance to a thorough study of the Leninist military theory legacy as applied to the tasks and features of the present day, taking into full account the latest achievements of societal and scientific-technological advances as well as the distribution of class forces in the international arena.

Under conditions of aggravation of the aggressiveness of imperialism, military matters remain important in strategy and tactics of the revolutionary forces of the present -- the world socialist system, the Communist and Worker parties of the capitalist countries, and the national liberation struggle. Hence proceeds the vital necessity of their profound theoretical understanding and comprehensive elaboration.

These and other matters of great theoretical and practical significance in our military organizational development, in development of Soviet military doctrine and science, in revelation of the heroic history of the Soviet Armed Forces, their glorious victories on famous battlefields of history,

their great liberation mission, and the solving of the increasingly important military problems assigned to them at the present stage by the 24th CPSU Congress, are examined in detail in a recently-published book written by Minister of Defense Mar SU A. A. Grechko entitled On Guard for Peace and the Building of Communism.¹

On the background of the magnificent successes of socialism in the struggle against imperialism, the author discusses the most important, fundamental military theoretical and practical problems handled by the CPSU in the course of building socialism and communism and its reliable defense against imperialist aggression. He examines in detail the influence of the successes of building communism on the development and strengthening of the Soviet Army and Navy, the influence of the scientific and technological revolution on the development of military affairs, enhancement of the role of military science in military organizational development, in the course and outcome of war, and in troop control at all levels. He shows the most effective ways to achieve further solution of military problems, including on the international level. He clearly expresses a class, party approach to the subject, historicism, as well as a dialectical materialist analysis of its most important aspects.

* * *

Lenin's ideas on the leadership, guiding and organizing role of the CPSU constitute an unshakable principle of development and strengthening of the Soviet Armed Forces, of our entire military organizational development, solution to the cardinal problems of national defense and elaboration of problems pertaining to the victorious conduct of wars in defense of the socialist homeland. They serve as a point of departure for the high ideological level, communist party-mindedness and revolutionary orientation of all military activities and solution to problems on the basis of Leninist methodology. This idea comprises the heart of the study and runs through its four chapters, from the introduction to the concluding summary.

The book emphasizes that the 24th CPSU Congress once again demonstrated the triumph of the ideas of Marxism-Leninism and proletarian internationalism. It is permeated from beginning to end with a Leninist spirit and convincingly demonstrates that unity, solidarity, and an atmosphere of harmonious efforts based on Leninist principles prevail in the Communist Party of the Soviet Union. The CPSU is performing with dignity and honor the role of vanguard of the Soviet people, the political leader of all toilers. It is leading the homeland along the true Leninist path (5).

The theme of this work is the scientific analysis by the 24th CPSU Congress of the present stage of the struggle between socialism and capitalism, particularly in the area of economic and scientific-technological

competition between the two world systems, the congress's fundamental assessment of the present international situation, its character and features, and the degree of military danger emanating from imperialism.

* * *

Chapter One, "Resolutions of the 24th CPSU Congress, -- a Magnificent Program for Building Communism," consists of three sections: 1. External Political Conditions for Building Communism at the Present Stage; 2. Development and Strengthening of the USSR Economy; 3. Improvement of Sociopolitical Relations and Consolidation of the Party.

This chapter very precisely specifies the traits, features and conditions for the forward development of the first socialist nation. They are characterized by the increasingly complete and effective utilization of the advantages and potential of the socialist system, by further development of socialist democracy, strengthening of the Soviet state and its Armed Forces, by new achievements in the area of the economy, science and culture, by improved toiler living standards, as well as a further increase in the prestige and authority of the Soviet Union in the international arena and by strengthening of its influence for solving the root problems of the present day.

It is stated in the chapter that the congress offered enthusiastic support of the fundamental trends in CPSU foreign policy activity as contained in the Central Committee report: further consolidation and development of the world socialist system, unswerving strengthening of unity and international solidarity with the labor movement in the capitalist countries, consolidation of communist ranks on a Marxist-Leninist basis, support of the national liberation struggle of peoples, expansion of ties with the revolutionary democratic parties of liberated countries, with all anti-imperialist forces, and development of relations between states with differing social systems, guided by the Leninist principle of peaceful co-existence (page 9).

The CPSU directs all its foreign policy activity toward the objective of ensuring that the socialist world is stronger today than it was yesterday and stronger tomorrow than today. The general foreign policy pursued by the Soviet Union aims at securing peaceful conditions for the building of Communism. At the same time it resolutely opposes all aggressive forces and is realistically flexible, corresponding to the urgent needs of social progress, the struggle against imperialism and wars. This is in the first place a policy which has developed from the socialist revolution, promoting its revolutionary aims, and in the second place it is profoundly international, permeated with a spirit of solidarity with revolutionary, progressive forces throughout the world and constituting an active factor in the class struggle in the international arena.

The 24th CPSU Congress confirmed the earlier appraisal of contemporary imperialism, the features of which are today substantially defined by attempts to adapt to the new world situation. But these maneuvers by imperialism are doomed to failure. The general crisis of capitalism is increasingly deepening, and its inner contradictions are becoming more aggravated. It is becoming increasingly obvious that neither the processes of capitalist integration nor the class interest on the part of the monopolists to join forces in the struggle against world socialism will eliminate interimperialist conflicts. Integration processes in the West are developing under conditions of savage commercial competition, bowing to the dictate of the strongest, evolving in the final analysis into a new form of struggle among imperialist partners for spheres of economic and political influence.

All this intensifies the aggressiveness and adventurism of imperialism, which continues to seek a way out through wars and military conflicts. The forces of aggression in war are vigorously active: since the end of World War II they have initiated more than 30 so-called local wars and military conflicts in various parts of the world. Hence the increased importance of the defensive capability of the Soviet state, the role of the Soviet Armed Forces in this, their state and combat readiness to crush any aggressor. It is stated in this chapter that the military might of the USSR and the worthy fulfillment by the Soviet Army and Navy of the tasks facing them constitute one of the most important factors ensuring favorable external conditions for building communism in this country and the development of all socialist nations, as well as for the liberation struggle of peoples (pp 16-17).

Communism is defeating capitalism with its rapid, continuous economic growth, which expresses the superiority of the socialist system over the capitalist, by the comprehensive upswing in the economy and the constantly rising level of material and cultural living standards of the people as a whole. This process is steadily progressing, as is vividly attested by our planned development indices for the Ninth Five-Year Plan and for the more distant future. For example, while at the present time the industrial might of the nations of the socialist commonwealth is equal to approximately one third of the world figure, by 1985 they will account for approximately 40-50 percent of world industrial output volume.

The achievements of the Soviet economy are great and indisputable. These achievements prepared an excellent starting point for reaching the targets of the Ninth Five-Year Plan. It was stated at the 24th CPSU Congress that "the Soviet people, worthily completing the Eighth Five-Year Plan, have taken a new and important step forward in building the material and technological foundation of communism, in strengthening the nation's might and raising the people's living standards."²

"We value communism only when it is economically well-substantiated," stated V. I. Lenin (Poln. Sobr. Soch. [Complete Works], Volume 38, page 179). The party, following Lenin's lead, has incorporated in its new five-year plan the fundamental task of expanding and improving the industrial base for development of the socialist economy, particularly agriculture and related branches, to raise the technological level and efficiency of production, and radically to improve product quality. It is planned to increase industrial output by 42-46 percent, including capital goods by 41-45 percent and consumer goods by 44-48 percent. A high growth rate for heavy industry, the foundation of the state's economic and defense might, will be preserved.

In addition to describing the magnificent prospects for growth of the socialist economy, this chapter contains an extensive assessment of the program for improving sociopolitical relations in Soviet society and the steady growth in the leadership and guiding role of the party in this process.

Tasks connected with improving sociopolitical relations are focused primarily on further moral and political consolidation of our society, strengthening of the alliance between the worker class and peasantry, friendship and fraternal cooperation of the peoples of the USSR, on consistent development of socialist democracy, increasing involvement of the masses in societal and governmental affairs, on increasing communist consciousness on the part of all toilers, comprehensive development of science and culture, and spiritual prosperity of the Soviet citizen (page 25).

The party has done an excellent and comprehensive job in further strengthening the Soviet state and improving the entire political organization of our society. One of the great triumphs of socialism is the inseparable unity of all nations and peoples of the USSR and unification of the equal Soviet Socialist Republics in a united, mighty Union of Soviet Socialist Republics, the 50th anniversary of which will be celebrated in 1972 (page 27).

The concluding part of this chapter deals with problems of further development or party ideological effort at the present stage. Today as never before it is essential to conduct an offensive struggle with great ability and to win victory on the ideological front, on the front of struggle for men's minds and hearts. This task has been formulated extremely precisely in the resolutions of the 24th CPSU Congress. The Resolution on the Party Central Committee Report reads: "The congress emphasizes that the forming in toilers of a Marxist-Leninist world view, excellent ideological-political qualities and standards of communist morality will remain in the future a central task of the ideological effort by party organizations.

"The most important thing in party ideological work is dissemination of the ideas of Marxism-Leninism and an implacable offensive struggle against bourgeois and revisionist ideology. A most important component part of ideological-political effort is instilling of a communist attitude toward labor and public property, development of toiler creative activeness and a strengthening of conscious discipline and organization" (page 29).

* * *

Chapter Two, "The Soviet Armed Forces -- Dependable Guard Over Socialist Conquests," consists of three sections: 1. Successes in Building Communism -- Foundation for Strengthening the Soviet Armed Forces; 2. The Scientific and Technological Revolution and Its Influence on Increasing the Combat Might of Army and Navy; 3. For a Scientific Approach to Solving the Problems of Military Organizational Development.

The chapter as a whole and its sections synthesize the experience of military organizational development accumulated during the course of the scientific and technological revolution, analyze the cardinal military theory problems pertaining to ensuring a unity of theory and practice in development of military affairs, and state fundamental questions for creative elaboration of military theoretical thought at the present stage. The author describes the Soviet Armed Forces, the state of the branches and arms, and their strategic and operational-tactical capability to wage modern warfare. The author emphasizes the fundamental aspects of Soviet military doctrine and military science dictated by their present state and further development, taking into consideration social and scientific-technological advances.

First of all we should emphasize discussion of the role and significance of the scientific and technological revolution as one of the main areas of historic competition between two sociopolitical systems in our time, including in the area of the military. The influence of scientific and technological advances on the military might of the state is extremely diversified. For example, research in nuclear physics has made it possible to develop nuclear weapons, which have become the determining factor in the revolutionary changes in military affairs. The rapid growth of mathematics, physics, particularly such areas as rocket dynamics, gas dynamics, as well as metallurgy and chemistry, has led to the creation of totally new vehicles for the delivery of nuclear warheads -- rockets, which today constitute a universal weapon.

Automated weapons and combat equipment control systems, modern communications equipment, radar gear, various automatic control and remote control devices have been developed on the basis of advances in mathematics, cybernetics, and electronics. Successes in the area of chemistry have made it possible to utilize extensively in military equipment many new

materials and substances which possess great strength, heat resistance and other very important properties.

The problem of supersonic aerodynamics was solved with the development of high-performance jet-propulsion engines. This resulted in a qualitative reequipment of combat and transport aviation. Utilization of atomic energy led to the employment of nuclear propulsion plants on submarines. In short, today there is not a single area of military affairs which has not been affected by the scientific and technological revolution (page 40).

The successes of the socialist economy and the outstanding achievements of science and technology have made it possible to equip our Armed Forces with modern weapons and combat hardware. This has led to radical changes in army and navy armament and to changes in the organizational structure of the Armed Forces, views on the methods and forms of conducting combat operations, methods and means of training and indoctrinating personnel.

Today the army and navy have advanced far beyond what they were at the end of the Great Patriotic War. They are qualitatively new Armed Forces, which possess great combat potential. They are continuously being armed with sophisticated weapons and combat equipment of various types, which enable them successfully to accomplish complex combat missions on land, in the air, and on the sea. The Armed Forces include the Strategic Missile Troops, Ground Troops, National Air Defense Troops, Air Force, and Navy (page 41).

Further on in the chapter the author describes the state and development of each of the armed forces branches, arms and special troops, their combat capabilities in performing various missions in the engagement, operation and war as a whole, and demonstrates the qualitative changes which have been achieved in improving the Armed Forces rear services.

The technical capabilities of the Soviet Army and Navy have grown immeasurably during the course of the scientific and technological revolution. Their main force, however, consists of the men who operate these modern weapons. Under present-day conditions victory depends to a large degree on the morale of the belligerent armies. Men who have a total mastery of their combat equipment and who are conditioned in a moral and political respect will in the final analysis determine the outcome of war. The Soviet Army and Navy consist of such individuals. Our outstanding soldiers, sailors, sergeants and petty officers, officers, general officers, and admirals are solidly ranked around the Communist Party and are totally dedicated to the homeland and the great ideals of communism. Patriots and internationalists, they serve as a model for the fighting man of the socialist army. Communists and Komsomol members, who comprise more than

80 percent of personnel, are the cementing and inspiring force of our army and navy ranks.

Officer cadres constitute the decisive element and basic figure in the Armed Forces. In recent years their ideological-political level, general educational level and professional expertise have substantially improved. The number of officers possessing higher military and special education has doubled in the last 5 years. Up to 45 percent of officer slots in the army and navy are occupied by engineers and technicians. Officer cadres possess the ability to train and indoctrinate personnel on a scientific basis, to control subunits, units, and naval ships, and have a mastery of all the methods and forms of waging modern warfare. (page 49).

It is important to note that during the last five-year plan the CPSU, through its tireless efforts in the area of the military, increased the strength of the Soviet Armed Forces to a new and higher level. This has been of enormous importance not only for the Soviet state but also for the entire socialist community, and for world peace. For it is quite obvious that if it were not for the military might of the Soviet state, the imperialists would already have unleashed upon mankind a third world war. "Every potential aggressor," it was noted at the congress, "is well aware that any attempt to launch a nuclear missile attack on our country will be met with a devastating response."³

The military might of the state and the strength of its defense are thus organically related to the nature of a country's social system, the level of development of its economy, science and technology, and the degree of unity of army and people. As is emphasized by Marxism-Leninism, this interrelationship becomes even more important under present-day conditions. This is why in elaborating the principal areas of development of the economy and implementation of plans for economic and social transformations which are of a peaceful, productive character, our party always takes into account the necessity of strengthening the defense capability of the USSR. This also found expression in directives for the Ninth Five-Year Plan. In the report on the Directives of the 24th CPSU Congress on the 1971-1975 Five-Year Plan for Development of the USSR Economy, Chairman of the Council of Ministers USSR A. N. Kosygin stated: "In a complex international situation, when imperialist reaction is resorting to military adventures and naked aggression, when the American imperialists, trampling the standards of international law, are waging a shameful, foul, bandit war in Vietnam, Cambodia and Laos and are promoting aggression in the Near East, when tension and the threat of war remain in the world, we do not have the right to forget for a single moment the necessity of strengthening our Armed Forces and their high degree of combat readiness. Our five-year plan will ensure the further strengthening of the defensive might of our state."⁴ This will make it possible to an even greater extent successfully to

protect the Soviet people and all nations of the socialist community from the threat of imperialist aggression.

This chapter stresses the importance of a scientific approach to resolution of the tasks of military organizational development and points out that our party is inalterably guided by the thesis of V. I. Lenin that without science it is impossible to build a modern army. Under present-day conditions military organizational development has become substantially more complicated and encompasses all aspects of a nation's preparations for potential war. It constitutes an aggregate of purposeful and interlinked efforts by the state, with the aim of securing the armed defense of the homeland by means of total and comprehensive utilization of economic, moral-political and military potential as well as the achievements of scientific thought. The character of the scientific approach to solving practical problems under the conditions of socialism is quite different than under conditions of capitalism. We utilize the resources of science by means of organic combination of the achievements of the scientific and technological revolution and the advantages of the socialist economic system. It is precisely the forms of development of science which are inherent in socialism which help us gain superiority in the military area. The Armed Forces of the USSR are an organization of a totally new type, radically different from the military organization of the capitalist countries. One peculiar feature of the Soviet military organization is the fact that it, constituting the instrument of a socialist, genuinely popular government, reflects the character of the socialist societal and governmental system, socialist productive forces and production relations. This is what predetermines its fundamentally new sociohistorical role, the meaning and significance of all activities, as well as the character of the scientific approach to solving the problems of military organizational development.

The fundamental basis of Soviet military organizational development is Communist Party guidance of the Armed Forces. Thanks to unflinching concern by the CPSU, our defense has become invincible. The history of the Soviet Union graphically attests to the extreme effectiveness of guidance over military affairs by the Marxist-Leninist party. Under the leadership of the Leninist party, the worker class, uniting around itself the broad toiler masses, has proven that its military organization comprises a real and impressive force which exerts enormous progressive influence on the course of world events. This is an exceedingly important achievement, which by right stands alongside all other historic accomplishments of the Soviet people (page 52).

As has already been emphasized, this chapter discusses the fundamental problems of contemporary military doctrine and science, their subject, structure, tasks, and role in securing a unity of views on war and methods of waging it on part of the party, people and army.

The basic fundamentals of Soviet military organizational development, we read in this chapter, find expression in military doctrine -- a system of scientifically substantiated and officially approved views on problems of preparation for and victorious conduct of war in defense of the interests of the Soviet Union and the nations of the socialist community (our underline -- Ed.).

Military doctrine is elaborated by the political leaders of the state with the participation of top-echelon military agencies, on the basis of an assessment of the international situation and distribution of forces in the world, taking into consideration all the material, spiritual and military potential of the nation and the potential enemies, development of weapons, and assessment of geographic and other factors. It includes determination of the character of a future war, the tasks of the state in a potential military conflict, methods of accomplishing these tasks, and directions to take in readying the country and its armed forces for war. Military doctrine expresses the degree of participation in war not only of the state's Armed Forces but of the entire people as well. Military doctrine is directly linked with all areas of activity of the state. All forms of struggle comprising the content of war, together with the principal and decisive form -- armed combat -- are embodied in it.

Soviet military doctrine derives entirely from CPSU policy in the area of defense of the Soviet socialist state. It is directed not at initiating wars but rather pursues the aim of readying the nation and its Armed Forces to repel aggression if war cannot be averted. Consequently, the question of employment of military force is considered in Soviet military doctrine only in connection with the possibility of war being initiated by an aggressor.

In the content of military doctrine one normally distinguishes its political and military-technical principles.

The political principles include tenets revealing the sociopolitical essence of a war which the imperialists may force upon the Soviet Union, the nature of political objectives and strategic tasks of the state in war, their influence on army and navy organizational development, and methods of preparing for and waging war. Leninist doctrine on defense of the socialist homeland constitutes the ideological foundation of Soviet military doctrine.

The military-technical principles of doctrine encompass problems of organizational development, training and utilization of the Armed Forces in war, the most important areas of combat employment, equipment, organizational structure of army and navy, development of the art of war, and demands on troop combat training and combat readiness. This aspect of doctrine points out the ways, means and methods of Armed Forces accomplishment of their assigned tasks.

Military doctrine, based on scientific achievements, itself in turn exerts on science an inverse effect in the sense of directing its efforts toward solving those problems which are of the most practical importance at the present time (pp 52, 53, 54).

In characterizing Soviet military science and its increasing role in carrying out the tasks of military organizational development, training and utilization of army and navy in war, the chapter stresses that one must gain a deep understanding of the fact that today a new relationship has formed between science and production, between science and practical military affairs. In addition to transformation into a direct productive force, science has also become one of the deciding factors in gaining victory in modern war. A scientific approach to solving all problems of military organizational development has become an imperative demand of the times.

Supported by Marxist-Leninist doctrine on war and army and on Leninist methodology, Soviet military science examines the nature of military operations in a future war, the laws inherent in it, methods of waging military operations, principles of the art of war, elaborates theoretical principles and practical recommendations on problems of Armed Forces organizational development and their preparation for a potential war. Together with practical activity, military science determines the ways to improve existing and develop new weapons (our underline -- Ed.).

The development of military science presupposes purposeful planning of scientific effort and planned utilization of scientific achievements, the conduct of scientific research in the aim of developing new weapons and combat equipment, elaboration of the most effective methods of utilization of manpower and hardware in the engagement, operation and war as whole, search for progressive forms and methods of training and indoctrination of army and navy personnel, rapid adoption of research results in practical military affairs, prompt synthesis and dissemination of advanced know-how connected with combat, political and operational training of troops and staff personnel.

Since armed combat per se never is of a purely technical character but is thoroughly permeated with the social essence of the political aims of the war, military science cannot be isolated from political, economic and ideological factors. It must take them into account and must utilize the achievements of all other sciences. Military science can successfully develop and in fact does develop only under the condition of maximum utilization of the achievements of the social, natural and applied sciences, from which it gleans material for performing its tasks and satisfying practical requirements. In addition, it affects other areas of knowledge and practical affairs as well, imposing on them specific demands in the interest of increasing the combat might of army and navy.

It is stated in this chapter that the might of the Soviet Armed Forces is based on the achievements of progressive military science, which was born, formulated and developed on a totally different basis from bourgeois military science. The methodological foundation of Soviet military science is Marxism-Leninism, which ensures it a deep penetration into the essence of the phenomena of war and gives it great strength in solving the most complex problems of military affairs.

In recent years Soviet military science has become enriched with new theses and conclusions on the potential character of modern war, means of improving the combat and mobilizational readiness of the Armed Forces, forms of their organization, and methods of operations. It is believed that in a world war, if the imperialists initiate one, nuclear missile weapons will constitute the decisive means of warfare. In addition non-nuclear weapons will be utilized, while under certain conditions units and subunits may conduct combat operations exclusively with nonnuclear weapons.

A war may begin with the employment either of nuclear or nonnuclear weapons. There are possible different variants of utilization of all types of weapons in the enemy's arsenal. The combat, political and operational training of our Armed Forces takes into account all methods and forms of military operations which are permitted by modern military equipment and which the potential aggressor may employ. Therefore all services and arms are developing, being perfected and equipped with the latest and most advanced weapons in conformity with the demands of coordinated weapons utilization in the modern engagement, operation and war as a whole (pp 54-55).

Future development of Soviet military science should be based on unswerving observance of the Leninist principle of combination of succession of the military experience of the past and bold statement and solution of new and vital problems concerned with military affairs. This chapter emphasizes the extremely large range of modern problems of military science the solution of which must involve concentration of the efforts of all our military theory front, all military cadres. These include first and foremost elaboration of the problems of maintaining constant Armed Forces combat readiness to stop an attack and crush the aggressor under all situation conditions. All activities of command, political, engineer-technician, scientific cadres, troops and staffs must be subordinated to solving these problems. They further include elaboration of methods of waging war, principles of the art of war, and methods of troop control on the basis of new technical devices and other vital problems of military theory and practice, which are examined and discussed in detail in the sections of this chapter in light of the demands of the 24th CPSU Congress (pp 56-60).

* * *

Chapter Three, "Constantly Improve Army and Navy Combat Readiness," consists of six sections: 1. CPSU Demands on Further Increasing the Vigilance and Combat Readiness of the Armed Forces; 2. Enhancement of the Role of Moral-Political and Psychological Training of Personnel; 3. Mastery of Modern Combat Equipment -- a Central Task; 4. Field, Sea and Air Training -- Foundation of Combat Training; 5. Developing Socialist Competition; 6. For a High Level of Military Discipline, Organization and Order.

This is essentially a purposeful, scientifically substantiated program of combat, political and operational training of troops and staffs, all elements of the Soviet Armed Forces, their routine and activities under present-day conditions. The military experience of the past and the latest experience from field exercises and maneuvers are concentrated here, raising the state of army and navy to a qualitatively higher level of combat and mobilization readiness to handle any and all missions in a modern war. The Dvina combined-arms maneuvers and Ocean naval maneuvers (1970), as well as the Brotherhood in Arms exercises, conducted jointly with the armies of the nations of the socialist community, constituted, as is well known, convincing evidence of this. The South field exercises held in June 1971 also constituted a major test of combat capability. These exercises involved the participation of the Ground Troops, Air Force, Air Defense Troops and Navy. The exercises were held in an atmosphere of enormous patriotic enthusiasm evoked by the resolutions of the 24th CPSU Congress.

Successes in strengthening the combat might of the Armed Forces and in improving their fighting efficiency and combat readiness are substantial. They were affirmatively noted by the congress. But Communists do not rest on their laurels. This chapter discusses ways of accomplishing the tasks in this area. It is emphasized that an all-out increase in the vigilance and combat readiness of the Soviet Armed Forces constitutes an objective necessity, that without this a high level of national defense capability is inconceivable. Lenin always demanded that a high degree of revolutionary vigilance be considered a most important condition for securing continuous Armed Forces combat readiness. He emphasized time and again that vigilance is the ability correctly to orient oneself in a given situation, to display political vigilance, promptly to expose any and all imperialist reactionary intrigues, strictly to guard party, state and military secrets and to take effective measures to achieve vigorous interdiction of hostile actions (Poln. Sobr. Soch., Volume 44, page 296; Volume 39, page 407; Volume 23, page 166). The party teaches us constantly to remember and carry out these Leninist instructions. This was forcefully reemphasized by the 24th CPSU Congress.

Enhancement of army and navy combat readiness is a complex and diversified task. To one degree or another it touches upon almost all aspects of troop activities and constitutes the result of an organic combination of unflagging political vigilance on the part of Soviet fighting men, the combat capabilities of first-class weapons and combat equipment, excellent combat skills on the part of personnel, their outstanding moral-political and psychological qualities, excellent field, sea and air performance, flawless discipline, organization and order. This in the final analysis is the crown of troop combat skill in peacetime and the key to victory in war (pp 61-65).

This chapter discusses enhancement of the role of troop moral-political and psychological training and reveals the deep sources of this factor rooted in the forces of socialism, in the ideals of communism, in communist moral fiber, conscientiousness, dedication to the people and the cause of the Leninist party. A high degree of ideological content and political conditioning constitute a foundation for all other qualities needed by the true fighting man. Today the Leninist statement that "in any war victory in the final analysis is determined by the morale of the masses which shed their blood on the field of battle" rings forth with new force (Poln. Sobr. Soch., Volume 41, page 121).

Psychological training, which is organically interlinked with morale-political and combat training, should ensure the forming in fighting men of such qualities which are essential in combat as courage, bravery, inner willingness to self-sacrifice, stability of psychological and mental reactions, resourcefulness, etc. Soviet fighting men should also possess outstanding sociopsychological qualities -- a feeling of comradeship, collectivism, willingness to engage in mutual help and assistance. All this acquires particular importance under the conditions of nuclear war.

Consequently, the task consists in cementing together in each fighting man his moral, volitional and physical capabilities, on the basis of this developing firm emotional and spiritual stability, constant readiness to withstand the sternest trials of modern war, preserving a will to win under the most difficult conditions.

The forming of excellent moral-political and psychological qualities essential in war is a complex and diversified process; it organically coalesces with the entire system of combat and political training, military indoctrination, and the entire fabric of army and navy life. A decisive role in this process is played by party political work. It always has been and remains a powerful weapon of our army, the strength of which has been tested time and again in the flame of battle. This frightens the enemies of socialism even today. This chapter contains specific recommendations

to officer cadres pertaining to organization and conduct of the entire process connected with forming excellent moral-political and psychological qualities in Soviet fighting men (pp 65-71).

An important aspect of this process and of total combat training as a whole is mastery of modern combat equipment in a short period of time. The foundation of combat training proper, as is well known, consists of personnel field, sea and air training. Conclusions and recommendations on these matters have been provided in the concrete examples of combat routine and activities of the Armed Forces in the present day. Recommendations and counsel are given, essential for the daily activities of command, political and engineer cadres. It is emphasized that it is important at each field exercise to create for the troops a new and instructive situation. One must strive to ensure that each and every field exercise, naval cruise, training flight, tactical and command-staff exercise is conducted under complex conditions, approximating to a maximum degree real combat. Only then will commanders of all echelons develop innovative operational-tactical thinking, initiative, and the endeavor to employ the most effective methods of accomplishing combat missions. A complex, dynamic situation makes it possible successfully to instill in personnel an excellent aggressive spirit, moral-combat qualities and to improve their psychological conditioning (page 77).

Fundamental syntheses, conclusions and recommendations have been given relative to the organization and development of socialist competition in the Armed Forces at the present stage of their development. Recommendations are offered on the basic content of socialist pledges in the troops, at training institutions and other military establishments, taking into consideration the specific features of military activities and Armed Forces routine (pp 77-80).

Substantial syntheses have been provided on the matter of further strengthening military discipline, organization and order in the troops in light of the demands of the 24th CPSU Congress (pp 81-85).

* * *

Chapter Four, "The Patriotic and International Duty of the Soviet Armed Forces," consists of three sections: 1. The CPSU on Unity of Patriotic and International Tasks of the Soviet People and Its Armed Forces; 2. Strengthen the Fighting Alliance with the Brother Armies of Socialist Nations; 3. Indoctrinate Ideologically Convinced, Firm, Toughened Fighting Men -- Patriots and Internationalists.

The importance of these matters is strongly emphasized. The monolithic unity and interrelationship of patriotic and international missions of the

Soviet people and its Armed Forces reflect the socialist nature of society, engendered by the Great October Revolution. The first socialist country, the world's first worker-peasant state, is the base and foundation of the international socialist revolution and national liberation movement. Therefore Soviet patriotism combines within itself a unity of national sentiments and socialist internationalism, the ideas of which are embodied in the successes of our people, the brother socialist nations and the entire world communist movement. They have become an inseparable feature of the ideology of Soviet society, a moral standard of conduct for all Soviet citizens, including army and navy personnel.

The CPSU has always viewed the national and international missions of people and army in a unity with the overall revolutionary task of the world communist movement -- liberation of the peoples of all nations from the oppression of capitalism. An example of this is the selfless struggle by the Soviet Union against foreign interventionists and domestic counter-revolutionaries during the Civil War years, the struggle against fascism during the Great Patriotic War and, today, the constant solidarity with the entire liberation movement of the present day.

The content of the tasks facing the Soviet Army and Navy broadened substantially with the forming of the world socialist system. The mighty socialist community of nations has become a real force, which is constantly growing and strengthening. Socialist internationalism has gone beyond the framework of a single country and has become the state policy and ideology of the Communist and worker parties of a large number of socialist countries. The principles of socialist internationalism are practically manifested in an indestructible friendship, in comprehensive political, economic, cultural and military cooperation, and in fraternal mutual assistance by the peoples of the socialist nations.

This chapter emphasizes that the international character of our army consists in the fact that it serves the noble cause of defense of the entire socialist commonwealth and the world historic achievements of socialism. This is dictated by the international character of socialism, by a community of interests of the socialist nations, by the vital interest on the part of all toilers in preserving and strengthening the world socialist system -- the leading revolutionary force of our era, the bulwark of anti-imperialist movement and the securement of peace throughout the world.

Soviet efforts to maintain the combat might of the Armed Forces at a level ensuring prevention of a new world war and crushing defeat to any aggressor are profoundly international and serve the common cause of defense of the peoples of all socialist nations. The other brother nations are also contributing toward maintaining the defensive might of the socialist commonwealth at a high level. Today's defense might of the USSR and the

other socialist nations gives us reason to state firmly that we possess armed strength of such colossal might that it will crush any aggressor (pp 90, 91).

In proceeding to a description of the combat alliance with the brother armies of the socialist nations, this chapter points out that with the forming of a world socialist system the Communist and worker parties of these nations were faced with a new task -- that of presenting to the united military might of imperialism the unified armed might of socialism. In accomplishing this mission, the brother parties have been guided by Lenin's statement that "standing against the vast front of imperialist powers, we who are struggling against imperialism constitute an alliance which demands a solid military unity, and we view all attempts to disrupt this unity as a totally impermissible phenomenon, as betrayal of the interests of the struggle against international imperialism... We say: a unity of armed forces is essential, and departure from this unity is out of the question" (Poln. Sobr. Soch., Volume 40, pp 98, 99).

This united armed force of socialism was indeed established. The unified might of the socialist nations of Europe, formalized in May 1955 by the Warsaw Pact, was placed in opposition to the aggressive schemes of the imperialists. The Warsaw Pact embodies and further develops the Leninist ideas of unity and close alliance of the socialist nations, consolidation of their political, economic and military efforts for defense of the revolutionary conquests of their peoples. The recent past has graphically demonstrated how correct and essential was the establishment of this organization as a measure to ensure the security of the nations of the socialist community against the real threat of imperialist aggression. Its great effectiveness was discussed at the 24th CPSU Congress: "The military organization of the Warsaw Pact has been perfected in recent years as a result of collective elaboration and implementation of a number of measures. The armed forces of the allied nations are in a high degree of readiness and capable of guaranteeing the peaceful labors of the brother peoples."⁵

In addition to general matters characterizing the military cooperation of the brother countries and armies, this chapter reveals the trends and paths of further development of their cooperation in the area of the military on the firm basis of Marxism-Leninism and proletarian internationalism (pp 92-98).

The chapter is concluded by a discussion of such an important matter as the indoctrination of ideologically convinced, firm, toughened fighter-patriots and internationalists. This matter is viewed in the light of those high demands spelled out by the resolutions of the 24th CPSU Congress.

It is emphasized that an important role in patriotic and internationalist indoctrination is played by propaganda of the revolutionary and fighting traditions of the Communist Party and Soviet people. The entire history of the CPSU, the heroic life and struggle of its founder and leader, V. I. Lenin, constitute the most vivid evidence of life-affirming patriotism and internationalism, selfless activity for the benefit of the toilers. Lenin pointed out time and again to the necessity of nurturing revolutionary traditions, skillfully utilizing them for continuous propaganda and agitation and for acquainting the masses with the conditions of the implacable offensive struggle waged against the old society (page 101).

Soviet patriotism and socialist internationalism is that force which makes our people and its army steadfast, courageous and invincible in battles against our enemies. A feeling of patriotic and internationalist duty inspires and mobilizes Soviet fighting men to overcome difficulties, to accomplish heroic deeds in the name of defense of their homeland and the nations of the entire socialist community, for victory of the communist cause (page 103).

The fact that our army and navy today exist and are growing stronger is to the historic credit of the Communist Party, one reads in the summary chapter. The Soviet people and its fighting men are fully justified in calling the party the organizer and leader of the Armed Forces. In party leadership they see a decisive condition for success in military organizational development and indoctrination of excellent moral-fighting qualities in personnel, an inexhaustible source for strengthening the might and combat readiness of army and navy.

One of the most important conditions for successfully accomplishing the missions facing the Armed Forces consists in improving the ideological maturity and Marxist-Leninist conviction of all our fighting men. We possess a powerful weapon for this -- Marxist-Leninist revolutionary doctrine. Lenin's priceless syntheses and conclusions contain philosophic and methodological principles and recommendations for elaboration of the problems of readying the nation for defense, for further development of Soviet military science and for unmasking the reactionary essence of imperialism (pp 106, 107).

* * *

We have seen that the materials contained in this scholarly work reveal in detail the major problems of the present stage of military organizational development, military theory and practice which crop up in the course of building communism and its armed defense against imperialist aggression. In light of the resolutions of the 24th CPSU Congress ways have been pointed out, in following which the Soviet Armed Forces, guided by the CPSU,

will continue in the future to be worthy of their great liberation mission, constituting the dependable shield and sword of socialism. The genuinely popular character of the Soviet Armed Forces is manifested in all this.

This study will without question assist military cadres of all echelons in more thoroughly understanding and accomplishing the tasks facing us at a higher level, uniting the school of political and military knowledge with the school of life.

FOOTNOTES

1. A. A. Grechko: Na strazhe mira i stroitel'stva kommunizma, Moscow, Voenizdat, 1971, 112 pages. Further references to this volume are parenthesized in the text.
2. Materialy XXIV s'yezda KPSS (Proceedings of the 24th CPSU Congress), Politizdat, 1971, page 31.
3. Ibid., page 81.
4. Ibid., page 186.
5. Ibid., page 7.

THE MORAL FACTOR IN A LOCAL WAR

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With the aid of local wars imperialism hopes to hold back the powerful revolutionary flood, to snuff out the aspirations of many countries and peoples for freedom, independence and socialism.

The nature of local wars of imperialism was exposed by V. I. Lenin. In his Voyna i Revolyutsiya (War and Revolution) he pointed out that the history of local wars of imperialism is the history of plunder of the peoples of Africa and Asia, the history of wars which constituted the continuation of politics by plunder and the murder of entire ethnic groups. In its predatory aspirations imperialism is capable "of any and all acts of barbarity, brutality and crime" (Poln. Sobr. Soch. [Complete Works], Volume 32, page 86; Volume 23, page 166).

It was noted at the 24th CPSU Congress that since the war the forces of aggression and militarism have initiated more than 30 wars and military conflicts of various scale. The flames of war continue to burst forth in various parts of the world.

A number of studies have provided an operational-strategic analysis of some local wars. But unfortunately the military press has produced no studies of the moral factor in local wars. It is the author's aim to elucidate certain aspects of this problem.

Moral-Political Features of Local Wars

Local wars of the present day are characterized by a number of specific features in a moral-political respect.

A local war initiated by imperialism is usually characterized by the fact that the socialist countries come to the assistance of the victim of imperialist aggression, and in such a case the local war takes one of the forms of conflict between the two systems, focused as it were in a specific area of the globe. At the same time it expresses the struggle between two opposite military-political concepts, two philosophies and different principles of morality and ideals.

Progressive organizations and world public opinion are inalterably on the side of the victim of imperialist aggression together with the socialist nations. Assistance to a people which has been attacked is of an economic, political and particularly moral nature, is comprehensive and essentially unlimited. It is precisely this which explains the fact that in recent

decades imperialism has been unable to sustain a single ultimate military victory in local wars.

Another substantial feature of contemporary local wars is the fact that imperialism views the "battlefield" in such wars not only as a proving ground to test new weapons but also to test and perfect methods of psychological warfare. This trait has been particularly noticeable in Indochina and in the Near East. The results of "experiments" and tests of methods of combat against liberation forces,¹ and methods of maintaining the "combat stability" of their troops are synthesized and find expression in special manuals: the following have been produced on the basis of experience gained in the war in Korea and Vietnam: U.S. Army Field Manual 16-100 (on the ideological conditioning of U.S. and enemy personnel); U.S. Army Field Manual FM 33-5 (psychological operations); AP 335-5 and AP 355-6 (personnel moral-political information); AP 360-81 (methods of personnel moral-psychological training), and others.

U.S. military sociologist D. Calula writes in his book Counterinsurgency Warfare, that the local war is a means of "testing and preparing troop morale for waging a nuclear world war."² The majority of methods of influencing morale which have been investigated and employed are directed primarily at the ordinary level of consciousness, its morale-psychological side. The U.S. "Office of Psychological Operations" in Vietnam is of the opinion that "control of the enemy's mind" can be achieved primarily: a) with the effect of moral intimidation (threat of destruction) and b) with the effect of "replacement of moral values" (introduction into the consciousness of the populace and armed forces of the country subjected to aggression of bourgeois ideas, which undermine the ability to fight for independence). Unprecedented acts of brutality by the military of the United States and its satellites, establishment of "scorched-earth" zones, and annihilation of every living thing within vast areas once again attest to the depth of moral erosion of bourgeois society and its army, which with these methods is attempting to destroy the will of the Vietnamese people to fight and to win.

The protracted character of local wars, which demand extended morale-psychological stresses on the warring parties, constitutes one of their prominent features. The protracted nature is due to the stubbornness and steadfastness of the masses, which are waging a just war, and to the enormous support being received by the liberation forces from the nations of the socialist commonwealth and the world's progressive organizations.

The capability to withstand the protracted psychological stresses of war is an indicator of high degree of moral fiber on the part of people and army, one of the most important indications of the morale factor. For example, the war in Vietnam has been going on for more than 2 decades; it has demanded of the nation colossal sacrifices and deprivations. Nevertheless

American military sociologists have been forced to acknowledge that "there are no signs of crisis of morale among the Viet Cong."³

The U.S. command cannot count on even a remote semblance of steadfast morale within its troops. The Pentagon must therefore intensify the commercial aspect of means of "boosting" morale. According to a specially passed law, a U.S. serviceman serves 1 year in Vietnam. Many are unable to withstand even this period of service, although each man receives after 3 months a week's pass (rest and recreation in Hawaii, the Philippines, Australia) with 2 weeks home leave after 6 months.

The Moral Factor of Imperialist Armies in a Local War

Imperialism experiences its principal difficulties in local wars in the moral-political area. This is understandable: the imperialist nature of war generates just resistance on the part of various elements which morally condemn the aggressor. An unjust war exposes the moral bankruptcy and moral emptiness of bourgeois armies.

As regards the moral factor of the aggressor army waging a local war, it is a unique model of the social consciousness of the bourgeois society with its conflicting tendencies and the predominance of chauvinist, militaristic elements. The omnipotence of the imperialist monopolies spiritually impoverishes people, evokes distorted senses and creates an atmosphere of uncertainty and fear of the future. The ideological and psychological press of bourgeois reality deforms people's social and individual consciousness and transforms many of them into blind implementers of the will of others, into obedient defenders of imperialist interests.

Local wars, although limited in aims and scope, manpower and hardware employed, are conducted by large masses of people. As a rule there is lacking a genuine understanding of the reasons for and aims, consequences and character of the war in the consciousness of a large percentage of the military personnel involved (yesterday's blue-collar workers, peasants, white-collar workers). The ideological elements of the moral factor reflect these matters in a distorted form, through the prism of bourgeois propaganda. For example, the majority of American military personnel captured in South Vietnam either totally erroneously appraise the moral and social meaning of the war which they are waging or frequently have no specific moral or political position on this question, viewing their participation in the war as a professional duty, a means of earning money, etc.

The individual consciousness of a large number of military personnel, poisoned by militarist propaganda, is little receptive to antiimperialist arguments. Today's U.S. soldier (the "average American") as a social type, possessing a standard stereotyped thinking, is crammed full of myths about

"democracy," "freedom," and the "moral right of the United States to lead the world" to such a degree that truthful information which percolates through to him either simply fails to exert the requisite effect or is grossly distorted by the "filter" of a false philosophy. Moral attitudes are for the most part taken on faith alone: the sociopsychological aspect of the moral factor is more highly developed (from the bourgeois standpoint), and this is quite easily explained. One cannot deny that bourgeois military ideologues possess enormous experience in social demagoguery, ideological and psychological pressure on men's consciousness and feelings; all means of brainwashing the masses are in the hands of the bourgeoisie, a fact which compels the masses at times to fight stubbornly for interests which are totally alien to them.

The American serviceman, on the basis of an appraisal of his moral qualities, appears as an enterprising specialist who believes in "God, America, and the dollar," with a highly developed technical and practical approach; he fights fairly well when he is confident of an overwhelming superiority over the enemy, but he does not possess much moral-psychological willingness to fight under difficult conditions; he is inadequately trained to sustain the extended hardships of combat life in the field and is not highly disciplined.

In analyzing the moral factor during the course of a local war one must take into account the fact that there are many mercenaries within the aggressor forces. The institution of the mercenary soldier in the mid-20th century has been galvanized by imperialism; it has taken on new and revolting features. Edward Kennedy has stated that more than 60 percent of U.S. Armed Forces personnel are volunteers and that if "military pay were increased, we could have an all-volunteer army."⁴

Such mercenaries comprise at least 80 percent of many units in South Vietnam. They include many déclassé elements and worshipers of the dollar. Financial reward is the main factor stimulating their "fighting spirit." There exists here an ill-concealed system of bonuses for each Vietnamese killed, for each operation, and for each order executed.⁵ Usually the mercenaries do not resort to ideological camouflage of their moral motives for fighting in this predatory war.

In the process of forming and maintaining the requisite state of the moral factor, military leaders emphasize the sociopsychological aspect. The U.S. Army Field Manual Psychological Operations states that psychological influence is the principal means of maintaining the morale-psychological factor at the level of tasks of the most dramatic situation.⁶ This extensive manual, consisting of 18 chapters, prescribes arousing "moral feelings of love for America," which may become "decisive in the spiritual motive force of the troops."

Lenin stated in regard to ideological speculations of this sort that the bourgeois leads to war individuals who are inexperienced in politics and "with ringing phrases about 'patriotism, national honor and prestige'" deliberately camouflages the foul deeds of financial swindlers and capitalist adventurers of every ilk (Poln. Sobr. Soch., Volume 23, page 121).

Special training methods aim at developing "firmness and absence of mental deliberation when encountering the enemy." In the U.S. Army approximately 25 percent of training time is devoted to methods of "counterinsurgency" warfare. As a whole the stamp of the gendarme punitive function lies in the moral factor of the imperialist armies which wage local wars.

It is a well-known fact that the "fighting spirit" of U.S. troops in Vietnam is maintained with the aid of ideological distortion of the truth, financial incentives and overwhelming military technological superiority. As long as these instruments work, military leaders succeed to some degree in achieving their aims. An abrupt drop in troop morale occurs as a result of substantial patriot attacks and defeats sustained. Then attitudes of depression and apathy quickly begin to dominate.

At moments of critical states of "fighting spirit" class conflicts become aggravated, while ethnic and racial antagonisms assume particularly acute forms (27 percent of U.S. Army enlisted personnel serving in Vietnam are Negroes. Strained relations between Negroes and whites become openly hostile on days when defeats have been sustained). Violence, mass stealing, insubordination and desertion are commonplace. During the war in Korea 125 out of every 1000 U.S. Army personnel faced charges for insubordination, shirking of duty in combat, etc.⁷

The January 1971 issue of the French magazine Actualités contains an article by [Van Teyrt] entitled "American Soldiers Between Vietnamization and Demoralization," in which the author writes that troop discipline and morale are presently at rock bottom. Drug abuse, brawling and racism have become commonplace in the army. It is estimated that about half of all soldiers use drugs. In the author's opinion many men go into combat due to fear of prison and repressive action and are merely waiting for the day when they will be rotated.

Sharp fluctuations in the state of morale, when blind militaristic self-assurance of the so-called "superman" alternates with animal terror in face of the inevitability of just retribution for crimes committed, are dictated by general social causes. But there are also specific causes as well.

Military personnel are frequently rotated in local wars, due to the low state of morale among the aggressor troops and in order to enable as large a number of personnel as possible to acquire combat experience. New

arrivals encounter such an unaccustomed environment that it takes a long time for them even to relatively adapt to it. Jungle or desert, humidity and oppressive heat, the unconcealed hatred of the local populace in combination with savage resistance and heroic struggle by the liberation forces lead to the most unexpected changes in the consciousness of the occupation forces -- desperation, repentance, etc; their morale noticeably weakens.

When there occurs even partial political and moral enlightenment, personnel become aware of the depth of that social injustice which imperialism is dealing the people which has been subjected to aggression. This sharply weakens morale in the interventionist armies. In the 17 March 1971 issue of the New York Times S. Sulzberger wrote that right now "the American army in Indochina is experiencing particular difficulties in the morale-psychological area, as a result of doubts regarding the need for this war. An army which entertains doubts about the aims of a war and about itself cannot be fully effective." We must agree with this grudging acknowledgment.

Lacking confidence in the reliability of the "human material" of their armies, its morale and combat qualities, which has been confirmed time and again in predatory wars, the political and military leaders of the imperialist armies would like to replace man with machine, automaton. But since this is impossible, in recent years they have greatly intensified the search for "versatile means of influencing" the consciousness and will of the man in uniform. According to reports in the foreign press, U.S. scientific research centers are testing means of a biochemical, neurotropic character capable of stimulating or inhibiting certain mental processes, making man indifferent to danger, ruthless, etc.

The moral factor of the imperialist armies particularly clearly reveals its weaknesses in comparison with the moral potential of the liberation forces.

The Moral Factor of Liberation Armies in a Local War

Local wars are normally not declared: they either quietly "creep" into the lives of individual countries and peoples or arrive with the clatter of combat vehicles of imperialist interventionist forces. Most frequently the aggressor delivers a massive sneak attack on the selected victim. Such was the case, for example, when Israel treacherously attacked the Arabs, and the events in many other wars also developed in this manner.

The element of surprise, a greater degree of mobilization, the greater preparedness of the aggressor and his substantial superiority in hardware ensure him (in most cases) an appreciable military advantage. At this

stage the moral factor of the liberation forces has not yet formed; it has not yet become a well-formed system in which all elements are coordinated and positively oriented. Anger, the bitterness of loss and hatred toward the enemy are sometimes manifested simultaneously with confusion and depression. The role of political leadership, of Communist and worker parties, progressive organizations and acknowledged leaders, who formulate tasks, aims, determine methods of struggle to employ against the aggressor and express them in political slogans and appeals, is extraordinarily great at this time.

As a rule, soon after the initiation of aggression, during the course of buildup of resistance against the interventionists, moral-political consolidation of the people becomes intensified, based not only on domestic forces but also on international support from the socialist nations and international progressive organizations. The role of the organizing element in forming the spiritual capability of a people and its armed forces to fight to the end for its freedom and independence is determined to a decisive degree by the maturity of the political leadership and the ability profoundly to express the root interests of the toilers.

The moral factor in war performs a number of functions, first and foremost the function of moral-political orientation. Conviction of the justice of a war, taught Lenin, determines a genuinely true class position in it and unprecedentedly raises the morale of the fighting masses.

Also extremely important is the function of consolidation of the entire nation and all progressive forces around a patriotic nucleus, the political leadership of the liberation forces.

The moral factor in a local war also performs the function of an immediate stimulus, a motive for action and behavior in conduct on the part of individual soldiers, units, and detachments. A high state of morale creates the spiritual prerequisites and resoluteness to implement in a combat situation concrete appeals and slogans.

In the process of implementation of these functions the law of increase in the moral superiority of the liberation forces over the interventionist army can clearly be seen. The moral superiority of the liberation forces increases as a local war runs on (and such a war assumes for the most part a protracted character). This pattern is dictated by certain objective circumstances.

First of all the morale of the liberation forces is strengthened by the just nature of the war. Ideas of just war find expression not only at the socioideological level but also at the sociopsychological level, and particularly in moral-psychological national structures. Moral elements of spiritual forces acquire a particularly noticeable national coloring and ring.

The fact is that small peoples, defending their independence against the encroachments of invaders, have a stronger feeling and awareness of themselves as a nation, within which at this stage the national bourgeoisie can play a positive role. The national element serves as a substantial consolidating stimulus and occupies an important place in the structure of morale as well. National enthusiasm, noted Friedrich Engels, is of enormous significance for struggle. It is a well-known fact that restoration of the morale of the Syrian and Egyptian armies following the Six-Day War became possible to a substantial degree on the basis of nationalistic ideas and sentiments.

But an increase in the role of the national element in the moral factor can simultaneously be reflected negatively, for nationalism hides the social-class aspects of war. And this must be taken into account when analyzing events. "...National character, historical traditions and particularly a differing level of civilization," stated Engels, "create many differences and engender the strong and weak points characteristic of every army" (K. Marks and F. Engel's: Soch. [Works], Volume 11, page 436).

With skilled political leadership (when the determining socioeconomic aspects of war are clearly emphasized as central, dominant) the national element of the moral factor is of positive significance. But in the final analysis even the national element can be correctly comprehended and utilized only on the basis of awareness of the just aims of struggle and its class character.

In many cases (in specific states of the moral factor of liberation forces) a certain role may also be played by religious elements. For example, in a description of the morale-political state of the armed forces of the Arab nations one cannot but see the influence of Islam. But of course neither nationalist nor religious ideas and feelings existing in social and individual consciousness can express the entire depth of social interests of the masses in war and are unable to give a real picture of the essence and character of the war being waged.

Another objective source of increased moral superiority over the forces of aggression is extensive, comprehensive economic, technical, political and moral support offered a struggling people by progressive forces, and by the socialist nations in particular. It was emphasized at the 24th CPSU Congress that the Democratic Republic of Vietnam can be confident that it can continue to count on the fraternal assistance of the Soviet Union in armed struggle and peaceful labors. The USSR helped restore the defense potential of the Arab nations and together with the other socialist nations is offering comprehensive support in their just struggle against the Israeli invaders.

Of course it is difficult for small countries and peoples which have been picked as victims of aggression to stand up under the onslaught of the imperialist war machine. But practical implementation of the principles of proletarian, socialist internationalism and an atmosphere of aid and support engender in the consciousness of the fighters of the liberation forces the concept of "we," which gradually goes beyond the framework of the content encompassing only their own people. There develops a spiritual atmosphere of a broader community, indirectly including within the moral factor of the liberation forces solid support, the sympathy and solidarity of many progressive countries and organizations. Numerous conferences and political demonstrations in various countries in support of the victim of aggression are of great moral assistance to the embattled forces.

The awareness and sense of a moral community of liberation forces and the forces of the world socialist system are becoming stronger. Moods which are normally extremely changeable acquire greater stability: the ideas and feelings of optimism, confidence of final victory and profound hatred of the enemy dominate in these moods, in spite of individual declines and fluctuations. The heroic struggle of the people of Vietnam, who have won many victories, constantly enjoys the broadest support of the toiler masses.

Finally, one must also take into account the following objective circumstance which determines the trend toward increase in the moral superiority of the forces of liberation: they are defending their native soil, the land of their ancestors, their deeds and aspirations. The feeling of homeland serves as an inexhaustible source of morale in the struggle against imperialist interventionists. A guerrilla movement in particular is possible first and foremost on home territory.

The conduct of a war on home territory gives patriots not only enormous political but also combat-morale advantages. For the fighters of the liberation forces almost all elements of the homeland (geographic, climatic, ethnic, historical, etc) are direct or indirect "allies." That which under normal circumstances may be a source of suffering and deprivation (tropical diseases, high humidity, etc) becomes a positive aspect for the liberation forces and is a detriment to the imperialist invaders.

According to the U.S. military journal Military Review, during the rainy season (March-September), up to one third of U.S. troops in Indochina become unfit for combat as a result of various ailments, complications from them, etc.

General and specific conditions objectively promote a clear moral superiority of the liberation forces over the aggressor.

Certain features of implementation of the functions of the moral factor in the local war are revealed in the course of combat operations.

First feature. For the country which has been subjected to imperialist aggression this war is not local at all. For the victim of aggression it is of a general, uniquely global character, for it affects the very foundations of this people's existence and demands extreme mobilization of all spiritual and material potential. For Vietnam, for example, as assessed by the Central Committee of the Vietnam Workers' Party, it is a "struggle for salvation of the homeland."

From the very outset war imposes extreme demands on the moral forces of people and army, without the fulfillment of which a nation cannot hope to preserve (or win) its freedom and independence. And at the same time the forces of liberation can achieve their moral-political potential fully and most effectively only by relying on the comprehensive political, military-technical and moral support of the nations of the world socialist system, the world communist and labor movement.

Second feature. The Liberation Army combines the operations methods of regular forces, employing "classic models," with guerrilla warfare methods. The aggressor cannot totally adjust to these combined forms of action; in Indochina, for example, the interventionists are in a state of constant danger and tension, which creates in them a mood of depression, uncertainty, deep apathy and plunging morale.

Third feature. Liberation forces engage not only the aggressor but also puppet regimes and emigré counterrevolutionary elements. This complicates the struggle and gives it overtones of civil war (which is advantageous to the aggressor), and makes moral-political unification of the masses for struggle against the enemy more difficult. Nevertheless the morale of the army of a puppet regime which lacks broad popular support is as a rule very low. The desertion rate has at times been as high as 20 percent in some units of the Saigon puppet army of South Vietnam.

The liberation forces in turn can under certain circumstances count on assistance in the form of military volunteers. History contains numerous cases of such assistance (Spain, Korea, Algeria). The heroism and high morale of the International Brigade in Spain embody the international solidarity of the worker class, the toilers, and all oppressed peoples.

Fourth feature. The local war is also viewed by the aggressor as a proving ground in which to test military hardware and to verify methods of conducting combat operations as well as organization of psychological warfare operations. The U.S. militarists employed in Korea and Indochina essentially for the first time napalm, phosphorus and ball-bearing

fragmentation bombs, several types of unmanned devices, guided missiles, models of the new Armalite, Vulcan, and Spiv infantry weapons, chemical defoliants, etc.

Employment of a new and unfamiliar weapon takes the consciousness "unawares" as it were, particularly the emotional side. A certain loss in significance of existing experience and information starvation (how should one act?) can create a morale crisis situation. Of course reflection of the new phenomenon may be adequate, correct, and yet consciousness "response" and the making of a decision to engage in specific action are difficult due to a lack of experience and knowledge of the characteristics of the new weapon. Unexpected or surprise battlefield employment of new weapons can negatively affect morale. This possibility is particularly strong when the adversary controls the air and enjoys a technological superiority. Thus while the interventionists have particular cause to fear surprise attacks (as regards time and place), the liberation forces have reason to fear the surprise employment of new weapons against which there are initially no countermeasures.

In a local war there exists the threat of a nuclear attack, particularly when circumstances are extremely unfavorable to the aggressor (threat of total military defeat, annihilation of large forces, etc).

Subjected to the effect of new weapons, liberation forces develop a high capability to stand up against the element of surprise and seek to find effective methods of struggle. In Indochina this has been expressed in the employment of tunnels, night actions, stepped-up military activities in the rainy season, etc.

Thus the moral factor (as the preparedness and ability of a people and its armed forces to carry the unprecedented burdens of modern warfare while not losing the will to fight and to win) is one of the most important factors in local wars as well. Expressing the general pattern of relationship between victory or defeat on the one hand and morale of the struggling masses on the other, it is manifested in local wars in a specific manner. The essence of these specific features consists primarily in the possibility of comprehensive material and moral assistance to the liberation forces from outside the zone of armed conflict.

The local war, engendered by imperialism and constituting a continuation of its aggressive policies, expresses essentially a concrete instance of the conflict between the forces of progress and reaction, concentrated in a given part of the globe. Its social analysis should in all cases take into consideration the political distribution of class forces within that area; economic, social and ideological features of conducting warfare in that region, which can promote improved effectiveness of resistance to

the imperialist aggressors. In the moral-political area it is struggle between two political lines, two philosophies, a struggle for the freedom and independence of small peoples and countries which are the victims of imperialist aggression, a struggle against imperialism with the all-out support of the forces of socialism, democracy and progress.

FOOTNOTES

1. For ease of presentation the author employs the term "liberation forces," which shall be defined as those countries and peoples which have been subjected to imperialist aggression and which are waging a struggle against the invaders. This problem is examined primarily on the basis of the events of the war in Vietnam, but it is at the same time obvious that local wars can occur in various theaters and in differing specific sociopolitical situations, which can introduce substantial revisions into this description.
2. D. Calula: Counterinsurgency Warfare. Theory and Practice, London, 1968, page 58.
3. Infantry, No 1, 1968.
4. E. Kennedy: Decisions for a Decade, London, 1969, page 34.
5. Military Review, May 1968, page 18.
6. U.S. Army Field Manual 33-5. Psychological Operations, 1968.
7. V. A. Matsulenko: Lokal'nyye voyny imperializma (1946-1966 gg.) (Local Wars of Imperialism [1946-1966]), Izd. VPA, 1967, page 14.

THE USE OF LENINIST EXPERIENCE BY THE CZECHOSLOVAK COMMUNIST PARTY
IN THE ORGANIZATIONAL DEVELOPMENT OF THE SOCIALIST ARMY

Lt Col CzPA A. Michňak

This year the Czechoslovak Communist Party celebrated an important date, its 50th anniversary. These 50 years constitute a history of struggle by convinced internationalist revolutionaries for the establishment of a Marxist party following the example of the Russian Bolsheviks, for implementation of the ideals and principles of the Third Communist International, and a systematic campaign against opportunism.

Consolidating its ranks, the party was called upon consistently to carry out the historic role of leader of the worker class and all progressive elements in Czechoslovakia, the role of forward detachment of fighters for the socialist revolution and the victory of socialism. We must emphasize that for a long period of time the party operated in the difficult environment of a bourgeois state, and later under the harsh conditions of Nazi German occupation. A new period in the activities of the Czechoslovak Communist Party began following the liberation of this country by the Soviet Army, and it is natural that at each stage the party had the task of defining a political line, an inseparable part of which is policy in the area of the military.

In the struggle for the socialist revolution the Czechoslovak Communist Party proceeded from the position that the conquest of political power by the proletariat can take the form of an open clash with the armed force of the ruling class. Therefore the question of the nature of the acute conflict which was possible as a consequence of employment of armed force by the bourgeoisie and its army was not only of theoretical significance. The Czechoslovak Communist Party consistently elaborated a program of action in respect to the bourgeois army as a component element of its general strategy and tactics, which corresponded to the revolutionary interests of the proletariat.

The guiding element of the Czechoslovak Communist Party's military policy in the period of bourgeois rule was a well-known demand of the revolutionary labor movement, theoretically substantiated by Karl Marx and practically implemented for the first time by the party of Lenin -- disarming of the bourgeoisie and arming of the proletariat. Practical questions were subordinate to this task, such as the question of whether or not young workers should serve in the bourgeois army. Lenin's counsel to learn the art of warfare in the bourgeois army (of course not for the purpose of firing on one's class brothers but rather for the purpose of taking up arms against the bourgeoisie in case of need) assisted our party in overcoming

"leftist" views, which stated that one should not enter military service in compliance with the announcement of mobilization.

Elaboration of a correct policy was assisted both by the party's experience and, first and foremost, by the synthesized experience of the world labor movement, reflected in the documents of the Third Communist International. The June 1922 Plenum of the Comintern Executive Committee dealt in a very concrete manner with problems of revolutionary activity in the Czechoslovak Army. As the plenum noted, the fact that military personnel technically possessed some democratic rights (for example, the right of suffrage) made it possible to combine legal forms of activity in the army with illegal forms, and thanks to this to lead a more successful course toward weakening the bourgeois army, conveying to the masses its imperialist nature and preventing its use against the revolutionary movement, both domestic and international. The Soviet reader will undoubtedly be interested in the fact that the main element in these activities was the endeavor to expose all anti-Soviet steps taken by the Czechoslovak bourgeoisie.

An important area of party effort in the army was protection of soldiers against the despotism of the militarist machine. The Communist Party always sought to attract soldiers to the side of the revolution, to take advantage of the requirement of military service in the bourgeois army in order to teach proletarians in uniform to master weapons and the art of warfare for possible future armed struggle to seize power.

Klement Gottwald, in his first speech in parliament, delivered on 21 December 1929, stated with complete frankness the purpose of Communist effort in the bourgeois army: "You say that we are demoralizing and destroying the army. Yes, we are doing just that to an army which you want to use against the people and against the Soviet Union. We are demoralizing an army in which you are the masters and the workers are merely cannon fodder. In short we are demoralizing and shall continue to demoralize your capitalist army, and we are campaigning for a Red Army, a proletarian army. In spite of your laughter and outcries, we shall destroy your army with the approval and help of the soldiers of this army."¹

The historic Fifth Congress of the Czechoslovak Communist Party was held in 1929. It consolidated the revolutionary line of the new leadership, headed by Klement Gottwald. Party military policy in a spirit of the principles and experience of Leninism was affirmed.

A tense international situation had developed by the mid-thirties. The crisis of bourgeois systems engendered fascism, the most vicious dictatorship of imperialism. At the same time there appeared new focal points of war, created by the imperialists and directed primarily against the USSR. In Czechoslovakia which, as other nations, had Nazi Germany for a neighbor,

a direct threat of German attack led to the necessity for revisions in the attitude toward the bourgeois state and army.

In the spirit of the recommendations of the 7th Congress of the Communist International, the party at its Seventh Congress in April 1936 defined a new military policy. It proceeded from the position that, although the essence of the Czechoslovak army as a bourgeois army had remained unchanged, it was objectively capable of becoming a weapon for defense of the homeland against German fascist aggression. The Communists opposed all attempts by the bourgeoisie to suppress internal revolutionary elements under the pretext of defense against the external enemy.

For some time the bourgeoisie-sponsored law on defense of the republic had been a point of clash with the bourgeoisie. The Communists campaigned in parliament and in the press against the bourgeois bill and proposed their own. Klement Gottwald formally announced in parliament the Communist formulation of the bill. The Communists demanded that the brunt of military expenditures be borne by the capitalists, that living conditions be improved for the families of noncadre personnel, and in case of war that the people perform a watchdog function over the economy and distribution of resources. The party demanded that fascist elements be removed from the army and other government bodies, as well as public organizations, with the decisive participation of people's committees in this effort, committees consisting of the members of nonfascist parties. The activities of all who sought to sabotage defense measures as well as the machinations of usurers and bribe takers should be resolutely suppressed. The bill called for antifascist indoctrination in the army and its organizational development following the model of the Red Army. Attention was also focused on military training of civilians on a voluntary basis, on the basis of democratic self-government and disarming of all fascist organizations. This attests to the fact that the party was solving problems of national defense and democratization of the army from a proletarian-class position. Implementation of the party's policy would have meant a weakening of the position of the bourgeoisie, and particularly of its most reactionary elements.

The 1935 Czechoslovak-Soviet Treaty of Alliance constituted a major victory for the party and all progressive elements in Czechoslovakia. The Czechoslovak bourgeoisie signed this treaty under the pressure of public opinion and in view of the threat of Nazi aggression. The treaty was not only of military significance. By its very existence it exerted influence on the development of democratic, antifascist forces in the country and assisted the party in popularizing the Soviet Union and its army by legal means. Public sympathy toward the Soviet Union and the Red Army grew. Thus even before the war there was taking place an accelerated establishment of fraternal relations between the Soviet and Czechoslovak peoples. These

relations were strengthened during the course of World War II in a common struggle and joined by the cement of common blood shed in battle against the fascist invaders.

The crushing defeat of Nazi Germany, in which a decisive role was played by the Soviet Union and its army, signified Czechoslovakia's liberation from the disgraceful occupation and created qualitatively new conditions for the activities of the Communist Party, progressive and antifascist forces in Czechoslovakia, and for development of the popular democratic revolution, which also accomplished important tasks of socialist revolution. As the democratic state developed into a state of dictatorship of the proletariat, conditions were also forming for the consistent application of Leninist principles of army organizational development and the army's transformation into an army of a socialist type. The Czechoslovak Communist Party's position was that the Leninist principles which had been practically tested by the Soviet Army are of not only specific but also of general effect and that their implementation is essential for the creation of a new Czechoslovak army, differing radically from the pre-Munich army. It was necessary to wage a struggle for this character of military organizational development against representatives of the bourgeoisie in the government, parliament and in the army.

In respect to these representatives the party pursued a policy which was in full conformity with the experience of the masses during the period of the bourgeois republic and the stage of struggle against German fascism. The fundamental idea consisted in the fact that the new army should be an inseparable part of a popular democratic regime as well as its instrument, a guarantee of the freedom and security of our peoples. The Košice Government Program² -- a program of the first government of the republic, a government of the popular front of Czechs and Slovaks, demanded that it be a consistently antifascist, popular liberation army, a genuinely democratic army which would carry out the will of the people, which would be bound to the people, which would enjoy the confidence of the people and therefore would receive its affection and care.

As was emphasized in the program, "the government will do everything to ensure that in the course of organizational development of the Czechoslovak Armed Forces the army's popular democratic character will be substantiated, consolidated and further deepened."

The new army was formed of those units which fought fascism, and particularly the I Czechoslovak Army Corps, which was formed on Soviet territory during the war, as well as partisans and personnel of the insurgent army of the Slovak National Uprising.

The popular character of the army and its bond with the people were to be ensured:

by the popular democratic system of our state, a component element of which is the army;

by the active participation of army personnel in the political affairs of the people;

by the purging of collaborators and other antipopular elements from command personnel. The Košice Government Program demanded that command positions be occupied "only by officers of sincerely democratic and genuinely antifascist conviction";

by educating command personnel in a spirit of the democratic policy of the Košice Government Program, with the goal of assimilating Soviet military experience verified in the course of World War II;

by strengthening cooperation between our army and the Red Army, which constituted a "model for building a new, truly democratic, anti-fascist Czechoslovak army."

Implementation of the demands of the Košice Government Program depended on the complex circumstances of the economic and particularly political development of society and the possibilities of transition of the popular democratic revolution to a socialist revolution. The elaborated policy was consistently implemented only following the February (1948) victory of the toilers. The critical question here was the application of the class principle and the principle of the party's leadership role.

The principal element of military organizational development following the February victory of the toilers was the training of command personnel who would be a dependable executor of the will of the ruling worker class, politically and professionally competent and physically toughened. Work with military cadres was conducted in the following areas: a purge of command personnel to eliminate reactionary bourgeois elements; reeducation and indoctrination of those among the old military specialists who had not broken with the proletarian revolution; a drawing from the ranks of the worker class and peasantry of new cadres, their indoctrination and training.

Thanks to the efforts of the party, we succeeded in creating an officer corps the political qualities of which corresponded to the interests of the worker class. By the Tenth Congress in 1954 62.1 percent of army officers were of worker origin, 13.2 percent were from the lower and middle peasantry, while the rest were from the families of lower-level white collar workers, civil servants and artisans. Only 1.6 percent of officers

were from the families of wealthy tradesmen, capitalists and landowners. In subsequent years the numbers within this category diminished, while the other categories changed insignificantly. At the same time 61.7 percent of command personnel in the army were Communists. This number gradually increased, reaching 74.2 percent by the beginning of the sixties. Subsequently it declined somewhat, since increasing numbers of young party-unaffiliated individuals were enrolled in the service schools.

When speaking of the training of Czechoslovak People's Army command personnel after 1950, one must emphasize the very effective assistance given by the Soviet Union and the Soviet command. This aid was rendered in all basic areas.

Hundreds of specialists with higher education and commanders in the technical arms were trained at Soviet service academies, while Soviet specialists took part in the training of higher command cadres, as well as scientific cadres, particularly in those specialties which were new for the Czechoslovak People's Army. Soviet experience and know-how were rapidly transmitted in the form of field manuals, training manuals, publications and lectures delivered by Soviet Army officers. Up to 1955, when the Warsaw Pact organization was established, the Czechoslovak People's Army had received 6000 different field manuals, training manuals, and special publications. Direct assistance was offered by Soviet Army advisers attached to the Czechoslovak People's Army during the period of its accelerated organizational development following 1950.

Thanks to this assistance and comprehensive work done by the party, which had taken steps to train new commanders in the military training establishment system, within a relatively short period of time command personnel had been developed possessing suitable class-political qualities, with a specific level of special knowledge and skills. Today approximately one out of every four officers possesses higher education, while many officers possess an academic degree.

Affirmation of the class principle of military organizational development did not take place without resistance on the part of antisocialist elements. As is well known, however, anti-Marxist views and actions were to no avail. The Leninist interpretation of cadre policy was clearly expressed in the Czechoslovak Communist Party Central Committee Presidium Decree on Cadre and Personnel Work effective 6 November 1970, which also applies in full measure to the army. The decree states that in cadre matters the Czechoslovak Communist Party proceeds on the basis of class and political criteria, as well as a full appraisal of the special knowledge, abilities and moral qualities of individuals. The Czechoslovak Communist Party constantly seeks to ensure that top positions are occupied by highly qualified cadres.

The process of consolidation of the class principle took place in close link with the process of strengthening the party's leadership role.

Prior to February 1948 the party did not establish primary organizations and a party edifice in the armed forces. It was important to prevent other political parties which were endeavoring to take over power from forming their own organizational structure in the army. This did not mean that the party was not taking steps to strengthen communist influence in the armed forces. It exerted influence through government executive agencies, in which the Communists were influential, through the National Front, through party member commanders and indoctrination officers, as well as through the rank and file personnel, where the percentage of Communists was higher than among command personnel.

Following the victory of the proletariat over the bourgeoisie in February 1948, the party was able fully to exercise its leadership role in the edifice of state, including the army. First of all party organizations were established, followed by a party political edifice in 1950, with the same rights, obligations and operating principles as in the Soviet Army.

In practice the leadership role of the Czechoslovak Communist Party in military organizational development consists primarily in the following.

Every important matter pertaining to national defense is discussed and settled with the direct and determining participation of the party and under its supervision. The party formulates the military policy of the state, that is the fundamental goals, directions and sequence of effort to strengthen national defense capability; it organizes the selection, training and placement of cadres capable of implementing party policy in the military area. Daily, purposeful party political effort in the troops, effort aimed at mobilizing all armed forces personnel for successful implementation of combat and political training plans as well as assimilation of Marxist-Leninist ideology, is carried out under the supervision of party executive bodies.

Military councils, one-man commanders, the armed forces political edifice and youth organizations carry out party military policy under party supervision.

By consolidation of its leadership role, the party completed a struggle of many years to win over the armed forces as an important instrument of popular power and a component part of the socialist nation's edifice of government. Experience confirms that the specific forms assumed by the party's leadership role may change, but the fundamental Leninist principles of Communist Party guidance of the armed forces remain firm as long as

there is a need for the existence of an army to defend the conquests of socialism. In party leadership lies the guarantee that the armed forces will always constitute a reliable bulwark of the peaceful policies of the party and Czechoslovak government as well as trustworthy defenders of the peaceful labors of our people and the peoples of the nations in the socialist system. The principle of the party's leadership role in the army constitutes a condition for implementation of the other principles, an essential property of the socialist nature of an army of toilers, as well as a guarantee that this army will always be a reliable instrument of the domestic and foreign policy of the socialist state.

It is not surprising that the principle of the party's leadership role was savagely attacked in 1968 by antisocialist elements in this country and by opportunistic elements within the party. Strengthening of party leadership constituted the basic content of the process of consolidation in the armed forces following the establishment of the new party leadership.

The principle of socialist internationalism is closely linked with the leading principle of the party's guiding role. Internationalism developed simultaneously with the labor movement. The proletariat had to employ an international unification and coordination of effort against an international force -- bourgeois cosmopolitanism and an exploiter alliance. Internationalism became an inseparable part of Marxist-Leninist ideology, an inseparable feature of all theoretical and practical activity by Marxist-Leninist parties.

Following the victorious Great October Socialist Revolution proletarian internationalism became one of the foundations in building the Red Army. All peoples and nations of the USSR possess a single common military organization, identical rights and obligations to defend the socialist homeland and its national interests; indoctrination of Soviet Armed Forces personnel is organized in a spirit of friendship and brotherhood among the peoples of the USSR, among the armies and toilers of the nations of the socialist community. The Soviet people and its army, true to Lenin's behests, see their patriotic and international duty in strengthening their country's defense capability and in active support for peoples struggling against imperialism and domestic reactionaries.

Following the example of the CPSU, the foreign policy of the Czechoslovak Communist Party is an expression of a unity of national and international interests pertaining to the country's defense. Our country has traditionally based its security on bonds of alliance. Following the collapse of the Versailles system and the betrayal at Munich, our foreign policy became oriented once and for all toward an alliance with the Soviet Union, an alliance based on a common struggle against German fascism. The victorious socialist revolution in this country placed it on the solid foundation of

a socialist societal and governmental system and Marxist-Leninist ideology.

With the forming of the world socialist system, socialist internationalism became enriched with new content. At the present time one of the main functions of the socialist nations is the strengthening of mutual friendship, cooperation and mutual assistance in the economic, political, cultural areas and in the military area proper.

The Leninist idea of unified military efforts by the socialist nations in combined, joint resistance against the intrigues of imperialism and reaction is of enormous significance, particularly if one considers the increased aggressiveness of imperialist circles and further development of the military technological revolution. The integration of all resources of the socialist nations is an objective necessity for societal development. This idea was implemented by establishing a defensive alliance of the socialist nations -- the Warsaw Pact and the Joint Command, which increased the defense capabilities of the socialist nations, whose defensive might is concentrated primarily in the military potential of the USSR.

Political, economic, cultural and military cooperation has been reinforced by bilateral treaties between individual pairs of socialist nations. The treaty of friendship, cooperation and mutual assistance between Czechoslovakia and the USSR, which was concluded in May 1970, proceeds from the position that friendship with the USSR constitutes a historically-proven necessity. It takes into account the increased capability for cooperation in comparison with that which could be foreseen by the 1943 treaty.

These thoughts were summarized by Gustav Husak in his address on the occasion of the signing of this treaty. "The treaty which we have signed," he stated, "fully takes into consideration those changes in the world which have taken place in the last 25 years and reflects the strengthened position of socialism in the world and a higher level of Czechoslovak-Soviet relations. The text of the treaty is in conformity with the principles of proletarian internationalism, on which is based a new type of relations which have developed among the socialist nations. Every word in this document attests to the fact that we are aware of our great responsibility for the results of our joint efforts in building communism as well as for its development and defense."

Comrade Husak noted thereby one of the fundamental aspects of our military policy, deriving from our alliance obligations and from the needs and interests of the Czechoslovak Socialist Republic. Its implementation fosters the process of integration within the world socialist community, its progressive development, the lessening of international tension, and gives a guarantee of security to Czechoslovakia under all possible conditions of

the European situation. Thus we have expressed simultaneously the fundamental aspect of organizational development of our armed forces and indoctrination of armed forces personnel.

In addition to the sociopolitical principles employed in Czechoslovak People's Army organizational development, we also apply such organizational principles as the principle of a regular cadre army, the principle of one-man command, the principle of strict discipline, centralism and, finally, the principle of continuous improvement in army organizational structure, harmonious development of services and arms, and strengthening of continuous combat readiness in conformity with the demands and prospects of improvement in contemporary military affairs and the tasks of defending the socialist homeland and the conquests of socialism.

The organizational and sociopolitical principles of army organizational development are carried out in a close interlink and unity. Their separation from one another is alien to the Leninist approach to armed forces organizational development and in practice leads to harmful one-sidedness and deviations. Only in their unity do they reflect the character of the socialist army. Lenin considered unity of political and special military leadership to be an extremely important principle of party military policy, which must be fully observed in the course of armed forces organizational development.

In proceeding to build a new army, the Czechoslovak Communist Party had at its disposal the experience of the Soviet Army, which had been tested in the conflagration of the Great Patriotic War. Because of this our party was able to avoid the complex process of seeking correct solutions along unexplored paths. The Soviet experience, which our army and the armies of the other socialist nations have utilized, has accumulated achievements in the area of organizing a modern socialist army.

Of course we are not dealing with a mechanical but rather an innovative application and simultaneously testing of the effect of generalized principles. Socialist military science receives an important argument in confirmation of the viability of Leninist ideas in the area of military organizational development and their international strength.

The international effect of the Leninist principles of organizational development of an army of a new type is stressed in a book by Soviet investigators entitled V. I. Lenin i Sovetskiye Vooruzhennyye Sily (V. I. Lenin and the Soviet Armed Forces). This book states: "Within the framework of the world socialist system experience has been amassed in establishing armed forces under the most varied historical conditions... Know-how in socialist military organizational development under present-day conditions is the result of collective efforts by the CPSU and the

brother parties of the nations of the socialist community. It is of great importance both for the socialist nations proper and for those peoples which will be struggling for socialism in the future. Mutual study of experience and know-how has always been one of the most valuable traditions of Communist and Worker Parties. Lenin drew attention to this time and again, stressing that 'complete socialism' is created 'from the revolutionary collaboration of proletarians of all nations.' Collective experience and know-how contains everything of value and significance which is of general and common interest, which is of instructional value for other countries and peoples. This also applies in full measure to experience in military organizational development."³

The Czechoslovak Communist Party highly regards mutual cooperation and exchange of experience and know-how among socialist countries in the area of military organizational development and is persistently campaigning for further strengthening and development of this cooperation.

FOOTNOTES

1. Klement Gotval'd: Izbrannyye proizvedeniya (Collected Writings), Volume 1, Gospolitizdat, 1957, pp 127-128.
2. It received the designation Košice because the Czechoslovak government which adopted this program convened for the first time on 5 April 1945 in the city of Košice (East Slovakia).
3. V. I. Lenin i Sovetskiye Vooruzhennyye Sily (V. I. Lenin and the Soviet Armed Forces), Second, enlarged edition, Voenizdat, 1969, pp 401-402.

MILITARY SCIENCE CONFERENCES -- AN IMPORTANT FORM OF MILITARY SCIENCE WORK

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Science is playing an important role in implementation of the historic resolutions of the 24th CPSU Congress. Science constitutes a powerful accelerating force for technological, economic and social progress and is an essential condition for strengthening the defense capability of the Soviet state. The tasks specified in the Congress Directives on the Ninth Five-Year Plan include all-out development of basic and applied scientific research and faster adoption of research results in the economy, with stronger ties between science and production.

Soviet military science plays an important role in raising the level of armed forces combat readiness and in strengthening our country's defense might. Military science is called upon, in conjunction with other sciences, to investigate thoroughly the laws and nature of a future war, the principles and methods of conducting war and military operations, and to elaborate the most acceptable structure of armed forces organization, forms and methods of personnel training and indoctrination.

Minister of Defense Mar SU A. A. Grechko stressed the particular importance of these problems in a speech delivered in October of this year at a conference of USSR Armed Forces ideological workers. He noted in particular that in connection with the steady improvement of the technological base of the armed forces, "we must even more deeply and comprehensively elaborate methods of conducting the engagement, operation, and war as a whole, as well as problems pertaining to the further improvement of our military organization." The defense minister also pointed to the great importance and significance of mastering scientific methods of troop control on the basis of new technical devices and training of personnel for modern combat operations.

Armed Forces military science cadres as well as line officers, general officers and admirals are being called upon to achieve successful solution to these and other problems; diversified forms of military scientific effort are being extensively employed.

Military scientific conferences constitute one of the most effective forms of this effort. At military scientific conference it is possible to discuss comprehensively, profoundly and productively the most vital problems of the art of war and military organizational development as well as other problems deriving from practical combat and operational training. Extensive participation in these conferences of prominent military commanders, experienced officers, general officers and admirals, teaching faculty of higher military training institutions and staff of scientific

research establishments makes it possible to examine and gain a thorough understanding of the results of military scientific research, theoretical and practical problems of troop operational and combat training, critically to evaluate various points of view on various problems, to elaborate unified views and to offer appropriate recommendations which can be rapidly adopted in practical troop and staff training and utilized in the activities of scientific research establishments and organizations. "This unity of views," stated M. V. Frunze, "which should create in the army a unity of thought and will, transforming it into a powerful, strongly-knit organization, is an essential prerequisite for planned indoctrination and training effort."

Promising items connected with further development of weapons, improvement in troop organizational-personnel structure, etc can also be discussed at a military scientific conference.

Field manuals, military regulations, guidelines, teaching methods manuals and other official documents regulating armed forces routine and combat activity can be prepared on the basis of the proceedings of military scientific conferences.

The success of any military scientific conference depends on comprehensive and careful preparation. It is very important first and foremost precisely to define its topic and objective, proceeding on the basis of the fundamental tasks facing the armed forces as a whole, the services and arms, military districts, groups of forces, fleets, and air defense districts at a given stage of combat training in the current year, as well as long-term prospects for development of military theory and practice.

Military scientific conferences can be devoted to a forthcoming or past (experimental, research, etc) exercise. In the former case the opportunity is presented to examine more thoroughly matters which must be studied and verified during the course of the exercise, and in the latter case it is possible to summarize the exercise and draft practical recommendations on methods of conducting combat operations which are most suitable and acceptable for line units.

In determining the subject of a military scientific conference one should bear in mind that such a conference usually runs 2-3 days, and sometimes less. Therefore in order to obtain extensive coverage of the topic it is necessary to introduce for discussion one or several items of maximum theoretical and practical value.

The subject matter of military scientific conferences can be determined by senior commanders in order to achieve more expedient and comprehensive solution to the major problems of military theory and practice. The usefulness and expediency of such a method has been given practical confirmation.

For example, in 1970 theoretical orientation was specified for military scientific conferences of services, military districts, groups of forces, air defense districts and fleets. At conferences of the armed forces branches the keynote addresses were delivered by prominent military commanders, who presented for discussion a number of new problems in the area of strategy, operational art and tactics. During discussion of these problems much useful advice was given and recommendations presented, aimed at further increasing troop combat readiness and fighting efficiency, improvement of methods of organization and conduct of military operations, as well as increased effectiveness of troop control.

The general objective of a conference consists as a rule not only in discussing current problems of the art of warfare but also in elaborating unified views on them, specifying the most effective means and methods of implementing final conclusions in practical troop training.

It is extremely important correctly to determine the list of conference participants. Of course they should possess fundamental training and preparation in the area of military theory and should possess experience in personnel training and indoctrination. It is also necessary, however, to involve promising young officers, particularly those who are innovatively and inquisitively seeking new forms and methods of troop training and are intelligently employing them in their practical activities.

Also meriting serious attention is determination of conference scheduling. In principle it is advisable that scheduling be handled by senior commanders. This will help avoid the scheduling of conferences simultaneously by various headquarters and establishments, consequently creating favorable conditions for participation by representatives of interested organizations.

After the subject and problems to be discussed have been determined, as well as the schedule and participants, a detailed schedule of events is prepared, which specifies the subject of the keynote address, other addresses and papers and a deadline date when all materials must be ready.

Experience indicates that preparation of the keynote address is the most difficult task in the preparation period (and sometimes preparation of supporting reports and even some addresses). This job begins with the drafting of a detailed structural plan, and if enough time is available, an extensive content outline as well, specifying the main items to be contained in the report.

This keynote address or report should be based on the results of the latest theoretical research and practical operational combat training. It should not be overloaded with well-known statements from guideline documents, works on military theory, materials from the military periodical

press, etc. They should be utilized only as initial data for subsequent development of a given theoretical thesis, and in some cases for corroboration of certain lines of thought. Many useful ideas for preparing this address can be drawn from the experience of the Great Patriotic War as well as from local wars which the imperialists have initiated in recent years.

Judging from experience, a high scientific-theoretical level of the keynote address and its profound content are ensured primarily by involving in its preparation a team of the most highly-qualified officers, general officers and admirals. A thorough discussion of important items is achieved when the drafting of the address is supervised by the commander who will present it at the conference. It is advisable to send an abstract of the keynote address in advance to conference participants. These should constitute brief summaries and should encompass essentially results obtained in the course of theoretical research and practical army and navy training. They must also formulate concrete conclusions and proposals and specify which require more thorough and comprehensive discussion. Experience indicates that this enables participants to prepare more thoroughly for discussion of problems advanced and ensures a productive debate during the course of the conference. Unfortunately, sometimes resumes of the keynote address are sent out at an extremely late date, and sometimes are not sent out at all.

During the preparation period the senior officer who is organizing the conference should exercise continuous supervision over his executing personnel, offering them assistance in working on the most important and difficult matters and ensuring prompt preparation of materials.

One of the fundamental conditions for achieving thorough presentation of vital problems of the art of war and elaboration of the most expedient actions by armed forces branches and arms is extensive utilization in preparing for military scientific conferences of the latest research methods (including with the aid of computers), and advances in the fields of mathematics, cybernetics, psychology, physiology, and educational science. Mathematical methods of operations research with the aid of computers reduce the time required to prepare the requisite calculations, ensure improved argumentation of advanced theses, assist in more deeply comprehending the essence of the processes and phenomena under examination, and make it possible to reveal new laws, patterns, and relationships in the development of the art of war.

Great importance is acquired by the ability of conference participants to elaborate in a mathematically correct manner the large quantities of data acquired in the army and navy on tactics of various forces and techniques of weapons utilization in a specific situation.

Comprehensive and qualified analysis of statistical data promotes successful solution of many vital problems pertaining to the art of war, revelation of the relationships and patterns of utilization of branches and arms in modern warfare, as well as detailed elaboration and timely revision of various points of field manuals, regulations, guidelines and other fundamental documents defining the activities of troops, fleets, staffs and military establishments in peacetime and in time of war.

It is the professional and party duty of command personnel, as well as staffs, political entities and party organizations to do everything possible to promote personnel mastery of modern, advanced research methods.

The success of further development of the art of war depends in large measure on the degree to which problems examined at military scientific conferences are coordinated with ideological effort, which is of great importance for development of the finest Soviet Army and Navy fighting traditions and which promotes indoctrination of personnel in a spirit of excellent patriotism and total dedication to the communist cause. This is accompanied by a broadening of the military horizons and knowledge of officers, general officers and admirals, opportunities for them to master history and theory of the art of war, with elaboration of the skills of an innovative approach to solving the most varied practical problems.

In April 1970, as is well known, a jubilee scientific conference was held in Moscow, dedicated to the Lenin Birth Centennial, a conference which constituted an important event in the overall effort to prepare the armed forces for this signal holiday. Assessing the significance of this conference, Minister of Defense Mar SU A. A. Grechko stated that the conference "has the task of even more deeply revealing the inexhaustible wealth of Lenin's military theory legacy and his diversified practical activities in the area of military organizational development, as well as the task of contributing to further improvement of ideological-theoretical and military training of our cadres."

The methods of conducting military scientific conferences may vary. In recent years two methods have won widespread recognition: with the first method, all items are discussed at a general session; with the second method, the keynote address or report is first presented at a plenary session, after which subsequent discussion and work is conducted in smaller sections.

One advantage of the first method consists in the fact that each conferee has the opportunity to hear the opinions of others and to express his own opinion on all items on the agenda. With this method, however, relatively few individuals have the opportunity to speak. With the other variant, whereby the members of each section discuss during the allocated time only

those items pertaining to the specialization of the section, a much larger number of individuals have the opportunity to express their views, while the adopted recommendations as a rule will be more specific and well-substantiated.

In each individual case methods of conducting the conferences depend on the topic and scope of the problems to be discussed, the quantitative and qualitative structure of participants, time available and other factors. For example, in examining a complex topic it is advisable to employ the plenary session-section method, that is the conference begins with a plenary session for presentation of the keynote address or report, after which the individual sections go to work; the conference is concluded with another plenary session, at which the section recommendations are discussed. If the keynote address was examined in advance by the conference participants, work can begin immediately with its discussion.

During the course of debate there should be no restriction to examination of the items advanced merely to the area of theory. Depending on the topic and aims of the conference, one can discuss new methods of troop operations (or new development in training methodology) which are employed in a practical manner, followed by the elaboration of consensus views.

In recent years joint military scientific conferences have been held by higher military training institutions and headquarters of various large units. Such conferences, for example, have been held by the Military Academy imeni M. V. Frunze, Armored Troops Academy imeni Mar SU R. Ya. Malinovskiy, and the Military Political Academy imeni V. I. Lenin. Experience indicates that they exert a positive influence on the development of operational art and tactics and make it possible more fully and thoroughly to resolve practical problems, at the same time enriching military theory.

We should note that the results of military theory conferences depend in large measure on the degree to which there is secured the possibility of free exchange of ideas, presentation of new opinions, critical statements, with the establishment of a friendly, productive atmosphere. In holding conferences one should not ignore any "minor matters"; it is essential thoroughly to comprehend and analyze each and every proposal and recommendation. Following discussion of each theoretical question or problem as a whole, conclusions should be drawn, which will promote further improvement in armed forces combat readiness and fighting efficiency, the level of their operational and combat training, and assist in the productive activities of scientific research establishments and military training institutions.

After conferences are over there is organized the study and synthesis of conference proceedings, in order to ensure that useful conclusions and

recommendations are communicated to the troops, fleets and headquarters, and utilized in their practical training. This is an extremely important phase of the overall operation. Therefore the command personnel who organize a conference should exercise personal supervision over synthesis of the conference materials and prompt practical adoption in the training and indoctrination of army and navy personnel.

Military scientific conferences devoted to current problems of military theory and practice are thus an effective means of further development of the art of war. When well organized, they help reach a solution to many problems which are of great importance for increasing armed forces combat readiness and fighting efficiency and strengthening of this country's defensive might in conformity with the demands of the 24th CPSU Congress.

OPERATIONAL EFFICIENCY AS THE MAIN CRITERION FOR THE QUALITY OF TROOP CONTROL

Lt Col B. Vaysman

An analysis of the results of field exercises, command-staff exercises and war games as well as the experience and results of research efforts in line units and at military scientific establishments very strongly confirm that careful attention is being devoted to modern theory and practice of troop control and that they have become a most important subject of extensive scientific investigation and continuous improvement. The logical process of increasing concentration of effort in the area of troop control is dictated on the one hand by a steady increase in the quantity and scope of measures carried out by control entities and on the other hand by the increasingly shrinking time during which these measures must be carried out. Thus we are faced with two conflicting tendencies, which make troop control one of the most important problems of modern theory and practice of warfare. Further improvement of troop control has become a most important task of contemporary military art.

Today the effectiveness of troop combat operations depends to a significant degree on quality of troop control. As is well known, a full assessment of control effectiveness can be given only on the basis of results of combat operations. This approach to assessment of control is incontestable: since control is aimed at the performance of combat missions, its quality should be assessed on the basis of the results of combat operations. Nor is there any doubt about the fact that this is the most sensitive and objective criterion of the quality of control and its effectiveness as a whole. Such an assessment of control, however, can be obtained only after troops carry out those combat operations the organization of which comprised the basic content of control.

Utilization of this criterion in determining effectiveness of control in the process of troop and control entity training under peacetime conditions involves even greater difficulties, since engagement or operation models constructed at troop and command-staff exercises cannot fully and precisely reflect the real conditions of the contemporary engagement (operation). In addition, before obtaining the concrete results of an engagement (operation) it is important to know whether control corresponds to the battle plan and consequently to the prevailing situation conditions.

Therefore particular significance is acquired by the possibility of assessing the quality of troop control during the course of battle, in the process of control proper, that is the possibility of focusing control entities on certain specific indicators which would enable one to determine

whether or not, control corresponds to the demands imposed on it by the conditions of the contemporary engagement (operation). These demands are well known. They include: continuity, firmness, flexibility, efficiency and secrecy of control. All these are factors which determine the quality of troop control.

The most promising method of assessing quality of troop control in the process of control will be that one which is based on utilization of a criterion which is sufficiently sensitive to all demands imposed on troop control. Operational efficiency of troop control could constitute such a criterion. Therefore we shall examine this term in greater detail and shall determine what relationships exist between efficiency and the other demands imposed on troop control (continuity, firmness, flexibility).

Fulfillment of each of these demands is closely interlinked with fulfillment of another or all other demands imposed on troop control. It does not require any special examination to see that in order to ensure operational efficiency of control it is also mandatorily necessary to carry out the majority of measures directed at achieving continuity, secrecy, firmness and flexibility of troop control.

Thus fulfillment of the demands of continuity, firmness, flexibility and secrecy in implementing troop control is inseparably linked with the achievement of operational efficiency. To these demands we should add substantiation of decisions.

In connection with the above we assume that there is no need to advance a great number of demands in an assessment of control quality. Otherwise it would be impossible to obtain an unambiguous assessment. There should be one demand -- operational efficiency of control, while it is more advisable to view all the others -- continuity, firmness, flexibility and others -- as a component complex of mandatory indicators in control which ensure its operational efficiency.

Consequently, operational efficiency of control can serve as a criterion in determining quality of troop control.

Attempts by many authors and teams of investigators to find a criterion (or criteria) for a quantitative expression of quality of troop control will in our opinion acquire greater purposefulness and effectiveness if efforts in this area will be concentrated precisely on quantitative expression of operational efficiency of control, which most closely and precisely reflects quality of troop control as a whole.

One feature of the present-day role and content of operational efficiency in troop control consists in the fact that while in the past we spoke primarily of efficiency of staff operations or of an entire control entity,

today we apply the term "operational efficiency" [operativnost'] to a system of troop control as a whole. The latter substantially broadens the definition of operational efficiency and carries it beyond the time framework of staff operations alone, placing operational efficiency of control in relation to the time during which accomplishment of the requisite volume of work in control entities as well as preparation of troops for combat operations are achieved, and most importantly, a lead is gained on the enemy in various actions, and troop actions correspond to the decision and the prevailing situation on the basis of which the decision was made.

One cannot help but note, however, a confusing and sometimes identical utilization of the terms "operational efficiency of control" and "efficiency of operations of a staff or control entity as a whole," which is still encountered in some studies and in military practice. A systems approach to the problem of operational efficiency of troop control as well as an analysis of the results of staff research efforts in a number of districts attest to the fact that operational efficiency of control and efficiency of staff operations (or a control entity as a whole) are nonidentical terms.

Efficiency of staff operations is definitely composed of quantitative and qualitative indicators of performance of those tasks which are specified by the appropriate regulations or manual. One readily notes, however, that most of these tasks involve the operations not only of the staff proper but also those of other sections (departments, services) of the entire control entity, as well as the performance of subordinate and supporting subunit and unit headquarters, and particularly intelligence entities.

A delayed (lengthy) decision-making process may reduce the operational efficiency of staff performance (although the process in large measure depends on efficiency). The most businesslike, smoothly-operating and well-trained headquarters staff will be unable to achieve operational efficiency in its performance if too much time is spent on decision-making and if the decision-making method does not provide for the possibility of parallel operations by headquarters at several control levels. In addition, headquarters staff performance depends on the capabilities of utilized control means, the capabilities and effectiveness of work done by intelligence-gathering entities and command posts located directly in the combat formations of the troops conducting the combat operations. They supply higher control entities with situation data the character and prompt delivery of which determine promptness of control entity response to changes in the operational-tactical situation.

Thus operational efficiency of troop control is a broader concept than efficiency of headquarters staff operations, both in content and in scope of basic components included within the concept of "control system."

Bearing the above in mind, we believe that an assessment of the quality of troop control can find quantitative expression, not only to a "certain degree," as Engr-Col N. Bazanov¹ emphasizes in his article, but totally, in the efficiency and effectiveness of decisions.

A number of recently-published studies acknowledge a formula which expresses the conditions of operational efficiency of control in the form $T_{co} < T_{cr}$. Here control time T_{co} is the sum total of times T_1 , T_2 and T_3 , which respectively represent the time of collection and processing of operational-tactical information and transmission of commands to the line units for execution; critical time T_{cr} is that minimum time within which all requisite troop control measures must be carried out.

It is precisely with consideration of the specified relationship between operational efficiency of control and T_{co} that the Bazanov article concludes that operational efficiency of control should be defined as the capability of a system to carry out troop control processes as quickly as possible. The author also presents a mathematical expression of control efficiency

$$Q_{co} = \frac{1}{T_{co}},$$

that is the smaller T_{co} , the greater the operational efficiency of control.

At first glance everything seemed quite logical, but as Engr-Col Ye. Dashevskiy² quite correctly notes, efficiency of control is characterized not so much by the high speed of the control system as by promptness in accomplishment of the assigned task. We should modify that to read promptness of assignment of combat missions, since it is precisely this fact which first and foremost determines promptness of accomplishment of assigned missions.

At the same time a correct approach to defining the term "promptness of performance of tasks or measures by control entity" is of considerable importance. In most cases promptness is considered in comparison with a critical time,³ after which earlier planned troop actions become ineffective or impossible. The question arises, however, of how one should define duration of critical time. Replies to this question bear the most conflicting interpretations. We know that T_{cr} is not a constant value. Its value is determined not only by the nature of the operational-tactical situation but also by when, at what moment in time the control entity received operational-tactical information and particularly information on the enemy.

As a rule data on the enemy which result in refinement of troop missions for a new decision come to the control entity when factor T_{cr} has already gone into effect and is operating. This is confirmed both by the mobility

of time frame T_{cr} and the considerable complexity of determining its duration. Consequently the problem reduces to determining the critical time value (T_{cr}) with maximum accuracy.

In practice the commander's situation assessment always terminates with conclusions the value of which is in direct proportion to the accuracy and substantiation of data on the time which the enemy will require to carry out his intentions. In fact this is nothing other than determination of that critical time whose duration controls both the pace of staff operations and the conditions for achieving operational efficiency of troop control as a whole.

Thus to determine critical time (T_{cr}) means to determine that time limit which will be used to assess control under given conditions from the standpoint of operational efficiency. This will provide the requisite results of purposeful operation of the entire control system and to a certain degree will predetermine success in achieving operational efficiency of troop control.

More attention must be devoted in the periodical press and in practical staff training not only to the search for means and methods of reducing time T_1 , T_2 , and T_3 , but also to methodology of determining critical time. In order to establish value T_{cr} it is necessary to possess data on the capabilities of the enemy's control system, for knowledge of at least mean approximate statistics in the enemy's area of control is just as essential as knowledge of standard time for control operations in one's own control system. Sometimes staffs interpolate their own time expenditures to analogous actions by the enemy. But this approach of course cannot claim computational accuracy.

Another important aspect which must be considered in solving the problem of operational efficiency of control is the comprehensive nature of this problem, which is dictated by the necessity of determining the most diverse qualitative and quantitative indices, each of which can acquire primary importance, depending on the situation.

For example, in order for headquarters to collect information on the enemy it is necessary for the primary source of this information (within the control system) to possess it, that is it is necessary for the manpower and means of all types of reconnaissance and intelligence-gathering to meet the demands of promptness of acquisition of intelligence. Obviously the sooner reconnaissance data reach the control entity the greater the critical time can be, and consequently the easier it will be to achieve operational efficiency in troop control. Of course organization of the reconnaissance effort applies to the area of control, but securement of promptness in acquisition of reconnaissance data is also a special,

technical problem and in many instances goes beyond the framework of the troop control system.

We should note that in solving the problem of operational efficiency there may occur factors which cannot be described either by quantitative or even by qualitative indices. We know, for example, that operational-tactical information constantly flows into headquarters, but in incomplete batches, and it is not always the case that the situation abruptly changes throughout an entire sector or along the entire front simultaneously. The commander's skill consists in promptly choosing, in the course of constant change in situation details, that moment when it is necessary either to refine assigned missions or to make a new decision. This is the function of man alone; no presently-existing automated system can perform this function. Consequently it is possible to possess a sufficiently reliable and rapidly-functioning automated control system, but if there is delayed response in situation assessment we shall not achieve operational efficiency in control.

Thus nonformalized factors also occur in the problem of operational efficiency of control, that is, factors which are not amenable at present to rigorous quantitative evaluation. These are also matters connected both with the collection of information which is of value at the given moment in time and with decision-making, for at the present time we do not possess reliable statistics on time expended on these measures.

Not only presently-employed mathematical methods and computer hardware but future automated control systems as well will be unable to solve this problem; they merely facilitate man's work in a control system, effecting transmission, storage and processing of information. At the present time man alone can fully synthesize this information and make decisions; the possibility of future improvement of efficiency of control depends on the success of future efforts directed at optimizing man's productive activity in the control system.

One important aspect of man's creative activities in a control system and particularly in solving problems of control efficiency is his practical prediction ability. It is usually the routine prediction activities by the commander and his staff which make up for that gap which as a rule occurs in a combat situation when there is a deficiency of information. Improvement in the art of situation prediction cannot be effective with a one-sided operational-tactical approach to this important problem of man's creative activity. Here we again need a comprehensive approach which encompasses a broad range of efforts in various scientific areas, from military psychology to heuristic programming in military cybernetics.

At the present time control of the control entity itself also remains an unformalized factor in the problem of operational efficiency of troop control. Of primary importance here is organization of control effort in the control entity. Experience in staff training indicates that organization cannot be limited to some one-time measure, plan or permanent instructions and orders. Organization of labor in the control entity is not a measure but rather a continuous process which should begin before the control entity receives the combat mission and should continue until such time as the troops accomplish that mission.

Today, when the present military technological revolution has made and continues to make substantial changes in the conditions and process of troop control, special importance for solving this problem is assumed by a rigorously scientific, quantitative and logical substantiation of those work methods which can be utilized by control entities under present-day conditions.

Increased troop maneuverability, the highly dynamic nature and swiftness of the modern engagement, rapid and frequent situation changes dictate a rapid "obsolescence" of operational-tactical information reaching the control entities. The principal task of commanders and staffs at all echelons is to make a well-founded decision, to communicate missions to the troops and to secure their execution before there is a change in the situation on the basis of which the decision was made. Fulfillment of this condition essentially comprises the basis of operational efficiency of troop control.

Thus operational efficiency as a criterion of quality of troop control should be defined as a combination of quantitative and qualitative indicators in a control system whereby total conformity is achieved between the operational-tactical situation, the adopted decision and troop combat operations.

One must approach the problem of operational efficiency of control as a complex and comprehensive problem, encompassing items of an operational-tactical and methodological character, as well as all those aspects of activity which constitute the object of investigation by Marxist-Leninist philosophy, military cybernetics, psychology and logic.

FOOTNOTES

1. Voyennaya Mysl', No 12, 1969, page 33.

2. Ibid., No 2, 1971, page 65.
3. I. Anureyev and A. Tatarchenko: Primeneñiye matematicheskikh metodov v voyennom dele (Employment of Mathematical Methods in Military Affairs), Voenizdat, 1967.

ON THE METHODS OF INFLUENCING AN OPPONENT'S DECISIONS

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In recent months various aspects of the problem of troop control and automation of troop control have been examined in the journal Voyennaya Mysl'.¹ We feel that it would be useful to focus attention on one aspect of the general problem of control, connected with influencing an opponent's will and mind when that opponent is making decisions in the course of preparing for and conducting combat operations.²

Selection of methods of such influence and purposeful implementation of the requisite complex of measures, taking into account not only achieved results but also analogous measures performed by the opposing side, comprise a complex process.

M. N. Tukhachevskiy noted: "...Actions are genuinely governed only by that side which achieves their development in conformity with a plan, and this means that genuine control of a combat engagement should constitute control of the entire process of combat, that is not only of one's own actions but to a certain degree the actions of the opponent as well, forced upon him by our actions... The art of control in combat demands an understanding of this complex, conflictive process."³

In order to exercise control over an opponent's actions the following primary items are essential: penetration of the enemy's intentions and plans, skilled conduct of combat, precise execution of one's own decisions and plans, and seizure of the initiative. The generals of antiquity stated that he who fights well controls his opponent and does not permit him to control himself.

In warfare control of an opponent's actions is achieved by deluding the enemy as to one's own intentions, capability, state and actions of troops; concealment of their actual position, by means of dummy, decoy, feinting actions; seizure of the initiative, manifestation of persistence and military pressure, a bold varying of combat techniques, and bold actions. One of the most important conditions for such control is discovery of the enemy's plan and intentions. As Machiavelli put it, nothing makes a general greater than discovery of the enemy's plans.

A commander, elucidating on the basis of reconnaissance data the spatial and functional correlations of the enemy's troop dispositions (combat formation, designation of its constituent parts and their links), predicting spatial-temporal characteristics and the dynamics of their development (combat capability, mobility, and maneuverability),

in determining the opponent's plan should establish what correlations between his elements the latter has included particularly for the purpose of delusion and concealment of plan (dummy fortifications and targets, phony communications traffic, revelation of one portion of actual communications and concealment of another, etc). Incomplete, frequently contradictory and delayed information on the enemy, reflecting only a past condition, makes it difficult to determine his intentions. The commander must mentally put himself in his opponent's position in order better to grasp the latter's plan.

One can cause the enemy to make and execute a decision which is favorable to us (herein lies the essence of control of the opponent's actions) with various methods: by applying the pressure of force, by the opponent forming an estimate of the initial situation, requisite objectives and specified procedure (algorithm) of decision-making which is favorable to us, and by influencing the choice of decision-making moment. One can also classify techniques of controlling an opponent's actions on the basis of these methods. Their distribution among the specified groups, however, cannot be very rigorous, since some techniques permit the exercise of multiple influence (for example, on estimate of initial situation and objective forming, choice of decision-making moment and forming of estimate of initial situation, as well as other combinations of methods). We shall briefly examine their content.

Power pressure includes those techniques which are the most easily recognized. A show of force in one form or another (force blackmail, demonstration of numbers or weapons, etc) is aimed at influencing the psychological state of the decision-maker and forming in his mind the primary objective of avoiding combat. Consequently the techniques in this group are linked with the techniques of shaping the opponent's objective. Somewhat to the side stands reconnaissance in force, the principal aim of which is to establish the connection between elements in the enemy's system, to determine the weak and strong points of his organization. This technique, however, can also be utilized for collateral attainment of other aims.

Power pressure linked with utilization of excessive forces will aim primarily at intimidating an opponent, and in certain cases at applying psychological pressure to one's ally. For example, during World War II the relatively small English city of Coventry was bombed by approximately 500 German airplanes (the Nazis even invented a special term -- "coventrization"). A similar act of savagery were the Anglo-American raids on Dresden in February 1945, involving the participation of approximately 3200 aircraft. The atomic bombing of the Japanese cities of Hiroshima and Nagasaki in 1945 had no strategic

purpose; they were "addressed" to a U.S. ally, the Soviet people, that is it was an act of "blackmail of force." Power pressure and blackmail can be of a less obvious nature as well, carried out in the form of various threats (deliberate show of force, new types of weapons, threat of unleashing a nuclear war, etc).

The group of techniques of shaping the enemy's initial situation estimate includes techniques connected both with tactical camouflage (display or concealment of actual installations, construction of dummy installations, display of one installation to look like another, dissemination of false information) and with utilization of means of "instantaneous" and abrupt change in the initial situation (surprise utilization of new combat techniques and weapons), which in turn affect the choice of decision-making moment.

This group of techniques can be revealed to one degree or another with the aid of technical intelligence-gathering devices. For example, utilization of absorbing coatings is discovered by determining the geometry of the target object with analysis of the reflected signal spectrum.

The group of techniques of shaping the opponent's objectives is recognized with great difficulty. This requires of the commander considerable intellect, intuition and experience, logical thinking, thorough knowledge of military history, ideology, military doctrine, indoctrination procedures, and the individual peculiarities of enemy command personnel.

Some techniques can be revealed only after a considerable amount of effort of a scientific research type. The following example is notable in this respect. U.S. Air Force leaders, substantiating a request for funds to develop a new low-altitude attack aircraft, emphasized that the USSR would have to spend approximately 21 billion dollars over a period of 5 years in order to improve air defense to cope with the new aircraft, while organization of air defense without the necessity of countering the performance of the new aircraft (as part of a program of continuous upgrading) would require, in the opinion of the Americans, an expenditure of only 6 billion dollars during the same period. Although the U.S. Secretary of Defense did not approve the request, he ordered development of certain assemblies and the engine for this aircraft.⁴

Objective-shaping techniques are realized through the psychology of the decision-making commander. They are more difficult to spot, and for this reason they are more insidious and dangerous than techniques of power pressure or techniques of shaping initial situation estimate.

A commander's thinking during the process of solving problems of troop control is based primarily on the deductive method. He draws his conclusions, particularly in determining the opponent's plan, as a rule on the basis of incomplete, fragmentary, frequently contradictory data, utilizing not only direct information but various indirect indications as well.

Neutralization of enemy deduction presupposes the conduct of combat operations according to a plan whereby their objective cannot be discovered at least until the final stage of the operation, that is the enemy should see in the actions a large number of possible variants, all of which, in spite of their diversity, should be more or less equally probable. For example, movement of a large number of hostile aircraft into an area which does not contain air defense installations but which does open up routes to two or three important areas faces commanders with a difficult logical problem of determining the opponent's real intentions. The selection of a minor strategic axis, containing several important targets, enriches and enhances the value of a plan of operations by compelling the opponent to scatter his forces for defense.

Neutralization of the opponent's deduction, increasing the uncertainty of our intentions, on the one hand makes it more difficult for the opponent to shape the objectives of his actions, and on the other hands disrupts the algorithm (sequence) of his decision-making, requiring additional effort and more time to reach a well-founded decision.

The group of techniques of shaping the opponent's decision-making algorithm requires substantial expenditure of effort, particularly the technique of regular conduct of strategic-scale exercises on one plan with the aim of decisive actions on another plan which sharply differ from the training exercise.

Techniques influencing choice of decision-making moment are of particular significance to air defense troops conducting combat operations under conditions of a rapidly changing situation. Choice of moment to launch a sudden attack and utilization of a shortage of time for decision-making in combination with other techniques and methods of influencing the opponent can constitute an extremely sharp weapon in warfare.

Utilization of a time shortage is the most important technique influencing choice of decision-making moment. As regards choice of moment for a surprise attack, when the opponent possesses various types of intelligence-gathering means, it is relatively difficult for large forces to conceal preparations for a massed attack.

There exist connections between control and various kinds of combat support (reconnaissance, major tactical concealment, etc) as well as psychological warfare and electronic countermeasures, determined primarily by the aim to be achieved as a result of controlling the opponent's actions. The greatest development of these connections can be observed in the shaping of the opponent's initial situation estimate. As a rule this task is resolved with the combined utilization of several techniques which differ in character of influence on the psychology of enemy command personnel. For example, display of one installation in the guise of another should be accompanied by display of appropriate relations between analogous installations. A dummy command post should maintain radio communications with the same pattern as a real command post. In like manner a dummy installation will be more readily accepted as genuine if when it is displayed steps are taken to hinder the reconnaissance effort. Considerable influence on shaping an initial situation estimate is also exerted by the element of surprise in employing new forces.

In order to ensure control of the opponent's actions reconnaissance and intelligence-gathering are required on a broader scope, encompassing in addition not only the organizational aspect but also the morale-psychological state of enemy command personnel and troops and determination of the effectiveness of psychological techniques employed.

Electronic warfare is closely linked with techniques of influencing the opponent's decision making, but it affects only initial situation shaping, primarily at the tactical level.

Some techniques of controlling the opponent's actions can be revealed with an analysis of the counterpropaganda methods employed by him. Direct or indirect denial or minimizing of the importance of a given action by our side may indicate that it is having a result which is favorable for us; silence or distracting propaganda rather indicates that the result of the action is minimal; employment of forestalling and a combination of methods should be viewed as countercontrol. Herein is manifested the link between control of an opponent's actions and psychological effect.

Control of an opponent's actions is of a creative character: it should not rely on chance. "If we astound the enemy with an absurd action," commented Clausewitz, "then in all probability we shall not have good success but will perhaps be dealt a return blow; in any case the enemy will not be particularly upset by our surprise, for in our blunder he will find a means of averting negative consequences."⁵

In elaboration of countercontrol decisions one should not be carried away by a great number of hypotheses and proposals; one should select out the most probable ones and firmly execute designated plans. As Napoleon warned: "An abundance of ideas without firm and rapid analysis of those ideas blinds rather than clarifies."

Considering on the whole that tactics of deception should always run one step ahead of what the opponent knows about these tactics, it is essential to avoid underestimating the enemy, for a sure way of being deceived is to consider oneself more clever than others. Control of an opponent's actions should be viewed as the fine art of applying nonrepeating techniques, keeping one step ahead of the same strategem being employed by the opponent.

A vivid example of this is the Battle of Kursk. In the spring of 1943, when making preparations for Operation Citadel, the German Command carefully elaborated a plan of strategic attack by two army groups, Center and South. Various measures (night troop movements, radio silence, limited number of persons elaborating the operation) in Operations Order No 6, 15 April 1943, included the following: "...In order to deceive the enemy, continue in the sector of Army Group South preparations for Operation Panther. Preparations shall be intensified with all means (obvious reconnaissance efforts, advance of tanks, concentration of river-crossing means, radio traffic, agent activities, the spreading of rumors, use of air power, etc) and shall be continued as long as possible. These measures... shall also be effectively supported by appropriate measures on the front along the Donets River..."

At the same time this order specified for Army Group Center an absence of similar large-scale activity; the real situation was to be concealed from the enemy with all available means (withdrawal of troops toward the rear and feigned troop shifts, vehicle traffic during daylight hours, spreading of false rumors about the timetable of the offensive). In conformity with this order, concentration of the forces of both army groups was conducted far from attack positions; the majority of air units were displaced to front airfields only on the eve of the battle. In this operation the Germans employed new weapons on a massive basis: Tiger and Panther tanks, Ferdinand self-propelled guns, and the Focke-Wulf 190 A and Henschel 129 aircraft.

The Soviet command, utilizing information obtained from all types of intelligence means and carefully analyzing the combat situation, discovered not only the overall plan and probable axes of attack, but also the location of the force, potential reserves and their arrival timetables. The time of initiation of the offensive was also determined with great accuracy.

The powerful attack was opposed by a deeply-echeloned, impenetrable defense set up in advance, while to the rear of two fronts -- the Central and Voronezh -- was established the Steppe Front, the troops of which, comprising the Soviet High Command's strategic reserves, prepared for a counteroffensive. The entire operation took the German Command totally by surprise; their thrust hit a strong rather than a weak point. Later General Friessner said in self-justification: "We encountered a deeply-echeloned, strongly-fortified defensive system armed with numerous AT weapons. The defensive fortifications were so well camouflaged that even our constant air reconnaissance failed to spot them all. Thanks to well-controlled barrage fire by the enemy's artillery, our tanks were halted before minor natural obstacles, so that the attacking units ended up in front of strongly-fortified reinforced-concrete pillboxes without effective fire support."⁶

A skillful command effort promoted the success of the operation. On the Central Front, for example, 10 minutes before initiation of enemy artillery preparation, our troops conducted a 30-minute artillery counterpreparation aimed in on artillery position areas and control entities. This produced uncertainty among the enemy command personnel, shook their confidence in the success of the operation and deteriorated morale. The moment had been selected well. During the enemy artillery preparation Soviet troops conducted a second 30-minute artillery preparation, in which almost twice as many guns and mortars took part. Control of the enemy units, which had barely been patched back together, was again disrupted, as a result of which the enemy was deprived of the element of surprise on which he was strongly counting.⁷ Mauling the main enemy force in savage defensive engagements, the Soviet troops subsequently launched a devastating attack and as a result of a strategic offensive reached the Dnieper.

During the course of the Great Patriotic War the Soviet command made extensive use of a rich arsenal of techniques of controlling the opponent's actions on a strategic, minor strategic and tactical scale. We feel that this merits a special examination.

In bourgeois military literature elaboration of problems pertaining to influencing the opponent is conducted in separate areas (for example, psychological warfare,⁸ electronic warfare,⁹ etc). T. Shelling, for example, focuses primary attention on techniques connected with various methods of threat and ensuring the persuasiveness of threats: threat by risk, unreasonable behavior, "delegation," etc. The latter technique means shifting authority and responsibility for decision-making to an individual who has proven to rather unreasonable, rash or in some way interested in carrying out the threat.

We should discuss in particular the Herman Kahn theory.¹⁰ All techniques examined by him involve working on the psychological makeup of an opponent who is making a decision at a certain stage of development of an international crisis (Kahn specified 44 such degrees -- from "apparent crisis" to "spasmodic war"). Most can be assigned to the power pressure group: repression, threat by risk, unreasonable behavior, various forms of power blackmail, sensational show of force in the form of a powerful high-altitude or space detonation over enemy territory, speculative statements on military measures, provocative maneuvers and arms tests, ultimatums on use of nuclear weapons, a "harmless" strike into a desert area or mountain peak, exchange of strikes in the form of "trading cities," etc.

Kahn assigns to the initial situation shaping group such techniques as well-publicized shifting of naval and air units, enlargement of forces to wartime size, an increase in the size of induction callups, "anonymous" attacks, etc.

Kahn cynically recommends the assassination of statesmen as one of the techniques of altering the decision-making algorithm.

Adventurism, cynicism and particular attention to the elaboration of techniques connected with various methods of carrying out and ensuring the effectiveness of threats reflect in these theories the aggressive nature of imperialism. Therefore in elaborating problems of control of an opponent's actions one must take into account not only psychological but social aspects as well.

We should note that the very publication of the theories of Shelling, Kahn and other "strategists" in open articles and sources available to the public may also constitute a technique of influencing the opponent, aimed at forming in him corresponding doctrines and decision-making algorithms. This requires special investigation, careful analysis and consideration in top-level decision-making.

Control of an opponent's actions constitutes a complex logical problem requiring for its solution the processing of a large quantity of constant information of a historical, technical, psychological and dynamic character, and variable information characterizing the actual combat situation and tendencies of change. A commander and his staff are unable to convert such large volumes of information under present-day conditions: conversion requires the use of automated devices. Utilization of automation can be effected in two areas: first of all, for information-reference work and for primary processing of essential information, and secondly, in simulating conflict situations and the troop control process proper, in a preliminary playing out of a decision and an estimate of its potential consequences.

FOOTNOTES

1. Voyennaya Mysl', Nos 8, 10, 12, 1969; Nos 2, 6, 8, 9, 11, 12, 1970; Nos 1, 2, 4, 6, 9, 1971.
2. We shall henceforth call such influence control of an opponent's actions. In Soviet psychology literature this influence is also called reflex control (see, for example, V. A. Lefevr: Konfliktuyushchiye struktury [Conflicting Structures], Izd-vo Vvsshaya shkola, 1967).
3. Voyenno-istoricheskiy zhurnal, No 2, 1962, page 73.
4. Dzh. Tompkins: Oruzhiye tret'yey mirovoy voyny (Weapons of World War III), Voenizdat, 1969, page 243.
5. Klauzevits: O voyne (On War), Part I, Voenizdat, 1941, page 190.
6. H. Friessner: Verratene Schlachten. Die Tragödie der deutschen Wehrmacht in Rumänien und Ungarn (Bungled Battles. The Tragedy of the German wehrmacht in Romania and Hungary), Hamburg, 1956, pp 245-246.
7. Istoriya Velikoy Otechestvennoy voyny Sovetskogo Soyuz 1941-1945 (History of the Great Patriotic War of the Soviet Union, 1941-1945), Volume 3, Voenizdat, 1964, page 257.
8. P. Leynbardzher: Psikhologicheskaya vojna (Psychological Warfare), Voenizdat, 1962.
9. R. Shlezinger; Radioelektronnaya vojna (Electronic Warfare), Voenizdat, 1963.
10. G. Kan: Ob eskalatsii (On Escalation), Voenizdat, 1966.

THE STATUS AND SOME TRENDS IN THE DEVELOPMENT OF
RADIOELECTRONIC WARFARE¹

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The development of military radioelectronics and its increasing influence on the effectiveness of employment of modern means of warfare dictate the necessity of continuous improvement in the methods and means of neutralizing the enemy's radioelectronic systems and securing invulnerability of our own equipment to electronic countermeasures. The aggregate of presently-employed forms and methods of neutralizing hostile radioelectronic systems and achieving stable operation of our own equipment constitutes the essence of such an important element of modern war as electronic warfare. Its component parts are electronic intelligence, electronic countermeasures, and electronic countercountermeasures.

Electronic intelligence, involving the intercept and analysis of electromagnetic emissions -- is a fundamental means of obtaining information on enemy location and activities, as well as data necessary for combating enemy radioelectronic systems.

Electronic countermeasures are aimed at neutralizing or reducing the effectiveness of enemy radioelectronic equipment. They include radio and radar jamming, the employment of decoy targets, the effect of ionizing radiation and the destruction of radioelectronic installations.

Electronic countercountermeasures aim at securing the continuous operation of friendly radioelectronic equipment under conditions of hostile jamming activities.

There is a constant struggle going on today between means and methods of electronic countermeasures and countercountermeasures. Each side is endeavoring to gain control of the airwaves during peacetime since, according to the firm opinion of foreign experts, this greatly promotes superiority in all other types of military hardware.² This is indicated by increasing expenditures on electronic warfare gear. In the United States, for example, outlays for development and manufacture of such equipment have more than tripled in the last 10 years, and now comprise approximately 2 billion dollars.

Electronic warfare has presently become a component part of combat operations and an extremely important area of activity by all services and all echelons of military command. It is precisely for this reason that military leaders and scientists in the most highly-developed foreign countries state that without taking into consideration the effects of electronic warfare it is becoming impossible to plan and direct combat operations.

Let us examine some trends in the development of means and methods of waging electronic warfare in the armed forces of foreign nations.

Electronic intelligence is still an important means of acquiring information within the overall military reconnaissance and electronic countermeasures system. Sources of electronic intelligence are, as in the past, emissions from radio communications facilities, microwave relay facilities, radio remote control, radar, and radio navigation facilities. But today, as foreign authors note, in connection with the extensive adoption of scrambling and encoding equipment in radioelectronic systems, principal attention in the process of conducting electronic intelligence is focused not on intercepting meaningful radio transmissions but rather analysis of the nature and parameters of electromagnetic emissions, determination of the location of radioelectronic equipment, and determination of identifying features in their operation.

On the basis of this data, in addition to establishing the types, quantity, parameters and tactics of utilization of radioelectronic devices, one determines the location of airfields, missile launchers, military units and large units, as well as acquiring other information of a military nature. In many cases observation of the operation of radioelectronic equipment and its displacement helps determine the nature of enemy activity and intentions. The results of analysis of intercepted radio signals help during combat operations in reaching decisions on the method of neutralizing radioelectronic equipment, in determining what type and quantity of electronic countermeasures should be undertaken, in selecting jamming technique, and time for on- and off-switching jamming equipment.

At the present time tactical and strategic electronic intelligence is conducted by foreign armies. The former aims at determining the location, parameters and particularly the combat employment of enemy radioelectronic equipment, with the objective of organizing electronic countermeasures. The latter pursues the aim of acquiring data essential for elaborating methods and means of electronic countermeasures. Information obtained by tactical electronic intelligence is analyzed for the most part during the receiving process, while data obtained by strategic electronic intelligence is processed at special facilities and laboratories, with only a portion subjected to analysis during actual observation. Strategic reconnaissance data retain their value for some time, while information obtained by tactical reconnaissance can be utilized for the most part during an engagement or operation.

The acquisition, processing and analysis of electronic intelligence information are conducted by ground, air, space and naval electronic warfare units and subunits.

Ground electronic intelligence units and subunits are equipped with stationary, mobile and portable equipment. For example, electronic eavesdropping is conducted for the U.S. Army by the Army Security Agency (ASA),³ which consists of several battalions and companies. ASA equipment is used, in addition to the gathering of electronic intelligence, for monitoring the radioelectronic emissions of friendly troops, for electronic jamming, and for purposes of electronic deception and dissemination of false information. ASA battalions are assigned to army corps headquarters for the period of combat operations. Electronic reconnaissance companies in turn are detached from battalions and assigned to division headquarters. In addition to units of the Army Security Agency, tactical electronic intelligence is conducted by electronic warfare units.

At the present time electronic intelligence activities are regularly conducted by special units and subunits of NATO nations and the United States, stationed in West Germany, England, Turkey, Norway, Japan, Pakistan, the Philippines, Latin America, South Korea, Vietnam, at Guantanamo Bay (Cuba)⁴ and in the United States.

Ground radio reconnaissance units and subunits intercept and analyze radioelectronic signals of a military nature. Special attention is focused on intercepting radio transmissions at field exercises, orders pertaining to troop movements, emissions from radar equipment, signals emitted by systems for radio controlling rockets, artificial earth satellites, and other information.

The capitalist nations conduct an aerial electronic intelligence effort along the borders and territorial waters of the socialist nations. Eavesdropping missions are flown by special aircraft carrying electronic intelligence gear (for example, the American EC-121 aircraft carries radio intercept and signal analysis equipment weighing a total of 6 tons⁵). The greatest number of these missions are flown in the area of the Barents Sea, the Baltic, and in the Far East.

Scanning and detail reconnaissance satellites are employed by other countries in the conduct of an electronic intelligence effort from space. Principal attention in organizing scanning electronic intelligence-gathering from space is focused on determining the working band and operating conditions of radioelectronic facilities. This information is essential in order to select the type of equipment for subsequent intercept, radio direction finding and more precise signal analysis by detail electronic reconnaissance satellites. Electronic intelligence data obtained by both types of satellite is transmitted to ground stations by radio or by return of magnetic tape in special capsules.

The American Ferret satellite, for example, carries electronic intelligence-gathering equipment; this satellite is a modification of the Samos reconnaissance satellite. The Ferret system, which has been operational since 1964, includes four satellites, one of which conducts preliminary while the other three conduct detailed radio reconnaissance. The width of a satellite's observation coverage is 2-5 thousand kilometers; error in pinpointing the location of sources of electromagnetic radiation is several tens of kilometers.

The main efforts in the U.S. satellite reconnaissance program are aimed at locating air defense systems, missile launchers, spacecraft radio remote control facilities, and at detecting the existence of new radioelectronic systems.

Specially-equipped ships, such as the Americans' Pueblo and Liberty classes and the West German Trave and Oste, conduct an electronic intelligence-gathering effort on principal sea-lanes and on the fringes of the territorial waters of socialist nations. Ships of the Pueblo class operate in the Far East, while ships of the Liberty class operate in the Mediterranean. They eavesdrop on the operation of radioelectronic facilities at a distance of 80-100 km from shore. Sometimes these ships deliberately enter territorial waters in order to provoke radioelectronic facilities into operation.

Special intelligence agencies organize the electronic intelligence effort in foreign armies. In the United States, for example, such activities are conducted by several organizations: the United States Army Security Agency, the Central Intelligence Agency, and the intelligence services of the army, air force, and navy.

The National Security Agency has a complement of approximately 10,000 men. It is presently operating several thousand radio intercept posts established at U.S. military bases located around the socialist nations, as well as on board aircraft, ships, and satellites. High-speed computers are employed to decode intercepted transmissions. NSA cooperates in the field of electronic intelligence with counterpart agencies of Great Britain, West Germany, and Canada. The CIA conducts an electronic intelligence effort both with its own manpower and resources and with the facilities of the military services.

Electronic countermeasures are conducted by special units and subunits equipped with the appropriate gear. U.S. Army jamming activities, for example, are handled by the ASA and army electronic warfare battalions.⁶ The latter conduct electronic intelligence-gathering and jamming activities against electronic equipment carried on board rockets and aircraft, employed for reconnaissance, control, guidance and bombing. The U.S. Continental Air Defense Command operates similar battalions.

A U.S. army corps employs an ASA battalion and a corps electronic warfare battalion for jamming activities. An ASA group company and a corps electronic warfare battalion company can be attached to a division for disrupting the operations of ground and airborne radioelectronic equipment.

Antiradar concealment is employed to conceal combat equipment and military installations from observation by ground, airborne and shipboard radars. Modern radar equipment can detect under all visibility conditions aircraft, tanks, armored personnel carriers, trucks, military subunits, surface ships, and other targets. Ground targets can be observed particularly well with the aid of airborne high-resolution, side-viewing radar. A radar image of the terrain with targets situated on it is transmitted from the aircraft to ground processing and control facilities, where the received signals are converted to a radar terrain map. Comparing it with a topographic map, the crew of a combat aircraft can spot targets and bomb them.

Since real and dummy targets may look the same on a radar screen, an effort is made to conceal military installations and targets from radar reconnaissance by constructing dummy targets with the aid of antiradar reflectors, by "equalizing" to the background terrain the radar image of objects which can serve as reference points or auxiliary aiming points for bombing runs, as well as by concealing military equipment behind terrain objects and artificial screens of trees, brush or wire nets. The requisite effect in antiradar camouflage is achieved only if the combat equipment and installations are simultaneously camouflaged from other means of observation (visual, infrared, photoreconnaissance, etc).

The operation of radioelectronic systems is also disrupted as a result of altering the conditions of propagation of electromagnetic waves under the effect of ionizing radiation which attends nuclear explosions, or artificial ionization effected by atomization and combustion of cesium, sodium and other readily-ionizing elements.⁷ The ionizing radiation of nuclear explosions exerts the greatest effect on radioelectronic equipment operating in the shortwave band (shortwave radio communications are disrupted to a distance of several hundred kilometers from the site of a nuclear burst).

Ionized areas, absorbing energy and bending the path of radio waves, substantially reduce the effective range of radars and accuracy of determination of coordinates of aerospace targets. Reflections from ionized areas create interference observed on the radarscope in the form of flickering blips similar to target returns. Aerospace targets in ionized areas are totally screened from radar observation.⁸

In addition to change in the conditions of propagation of radio waves, the ionizing radiation of nuclear explosions affects the parameters of radioelectronic equipment and its operating capabilities. Radioactive radiation

changes the values of capacitors, resistors, and the parameters of semiconductor devices and electron tubes.⁹ Nuclear bursts also produce powerful pulses of electromagnetic energy which induce high currents and voltages in electronic equipment and communications lines. These can put equipment out of commission and can present a lethal hazard.

Electronic countermeasures in the air and space are aimed at penetrating anti-aircraft, anti-missile, and anti-space-weapon defense.

The capability of penetrating an anti-aircraft defense system is determined in large measure by the ability of the attacking aircraft to inhibit the operation of electronic detection and guidance systems and to protect themselves against radio-guided missiles and fighters. Toward this end attacking aircraft employ various jamming devices, decoy targets and anti-radar missiles.

Jamming can be effected both by special electronic countermeasures aircraft and by combat aircraft. Individual and group electronic countermeasures equipment is placed on board the latter. Special aircraft carrying group-protection electronic countermeasures equipment support attacking aircraft either directly at the intercept point or from a patrol zone beyond the range of anti-aircraft fire.¹⁰

Aircraft-released decoy radar targets, strongly reflecting radar signals, can substantially overload the target distribution system computers, increasing the time required to identify genuine targets and draw fighters and anti-aircraft guided missiles.

U.S. Shrike missiles are used to attack radar sites at a range of up to 30-40 km, with a target accuracy of 15-100 meters. Several of these missiles can be fired simultaneously in order to increase the probability of destroying radar sites.

In the opinion of foreign experts, the following may be the basic phases of electronic countermeasures carried out by attacking aircraft to penetrate air defenses. Upon approaching the radar detection limit the attacking aircraft fly low, utilizing terrain screening properties; upon reaching the target area they climb, simultaneously jamming air defense radar, firing missiles at radar sites and launching decoy targets. In this phase jamming is employed to conceal the aircraft from radar observation until they reach a point where they are no longer vulnerable to the air defense system. Great importance is attached to correct selection of the moment to initiate radar jamming. Upon entering the anti-aircraft defense zone, principal attention is focused on disrupting missile and fighter guidance and control, with the objective of preventing the AA missile or fighter from homing in on or being vectored to the target.

The Americans employ electronic countermeasures in their raids on targets in the Democratic Republic of Vietnam. Since 1965 U.S. aircraft have been employing all types of electronic countermeasures -- from jamming to attacking radar sites. U.S. electronic countermeasures tactics consist in the following. During raids on targets defended by anti-aircraft missiles, special EC-121 aircraft patrol along the coast of the DRV, conducting electronic reconnaissance, determining when anti-aircraft missiles are fired and transmitting this information to the attacking aircraft. The latter, having been informed that a missile has been fired, execute an evasive maneuver, initiate jamming or fire missiles at the radar sites.

When ballistic missiles became operational, it became necessary to organize an ABM defense. The United States, for example, has set up a ballistic missile early warning system (BMEWS) and is building the Safeguard ABM system. Since ABM systems are based on various radioelectronic equipment -- long-range detection radar, target identification and tracking radar, target designation, ABM missile guidance, control of ABM complexes -- the operation of such a system can be disrupted with electronic countermeasures. These can include decoy targets and multiple warheads, radar jamming, and reducing the level of reflection of electromagnetic waves from missile warheads.¹¹ Since it is comparatively difficult to distinguish a warhead from other aerospace objects which readily reflect radar signals, work has begun abroad on developing special decoy targets in the form of corner and dipole reflectors, arrows, spheres and inflating balloons.

Active jamming in combination with dummy targets is capable of effectively disrupting the operation of ABM radar facilities. Reflection of radar signals from warheads can be reduced by giving them a special low-reflectivity shape and coating them with absorbing materials.

When a missile enters the atmosphere a blanket of ionized gas forms around it; radars can identify the warheads by observing this blanket. In order to make warhead radar detection more difficult, it is proposed to reduce the ionized blanket, altering the shape of the warhead and employing special materials which absorb missile warhead thermal radiation, as well as neutralizing the ions with oppositely-charged gas particles. At the same time measures are being taken to increase the ionized envelope of dummy targets. This of course will reduce the difference in intensity of reflection of electromagnetic energy from warheads and dummy targets and make it more difficult to discriminate between them.

In addition to the above-enumerated methods of neutralizing the radio-electronic devices employed in antimissile systems, the Americans are developing maneuvering and multiple warheads capable of carrying several warheads and decoy targets, as well as missiles with warheads which home into radar sites.

Bearing in mind the increased probability of electronic countermeasures, steps are being taken abroad to improve the protection of radioelectronic devices against jamming.

With this aim in mind, it is planned to employ in American ABM system radars capable of identifying missile warheads on the basis of discrimination between difference in the signals reflected by warheads and decoy targets, as well as by discriminating these targets on the basis of speed, trajectory and other indications. During the target tracking process signals from warheads and decoy targets received by the radar stations are fed into a computer, where they are compared with computer-stored data on warhead characteristics. As a result of this comparison the computer can distinguish genuine warheads from decoy targets.

Aware of the present importance of electronics in space, a number of foreign countries are engaged in programs to develop hardware and methods of conducting electronic countermeasures in space. The purpose is to make radar detection of spacecraft more difficult, and to reduce the effectiveness of weapons employed in antispacecraft, antimissile, antiaircraft defense systems and space weapons systems.

In the opinion of foreign experts,¹² spacecraft in flight can be concealed by antiradar camouflage and jamming. It is proposed to create around spacecraft swarms of dummy radar targets, such as inflated balloons, corner and dipole reflectors. Spacecraft can be coated with radioabsorbing materials in order to reduce the degree of reflection of radar signals.

Radioelectronic devices of a defense system against space weapons can be jammed by automatic jamming transmitters carried on board satellites. Since spacecraft are comparatively small, and little power is required to conceal them, jamming equipment can be fairly light in weight and compact. It is proposed that spacecraft radioelectronic equipment be jammed by means of ground installations or satellite-borne equipment. There is the possibility of utilizing powerful electromagnetic radiation obtained from a laser in order to put out of commission radioelectronic equipment carried by spacecraft.

Research and development of electronic countermeasures abroad is being conducted in the following main areas. In place of individual devices, automated complexes of equipment are being developed, primarily for installation on board aircraft, ships and missiles.

Three types of aircraft complexes are being developed: individual protection of combat aircraft, escort aircraft, and support aircraft (electronic countermeasures aircraft).

The standard combat aircraft electronic countermeasures complex normally includes three elements. One of these is a multifunction system providing detection and identification of radioelectronic devices, measurement of emission parameters, determination of direction to source of emission, crew warning that the aircraft is being painted by radar, and actuation of jamming equipment. The system includes a receiver which warns that an antiaircraft missile has been fired, a radio direction finder which guides the aircraft to the radar site, and a device for firing antiradiation missiles. In addition to radio-frequency band reconnaissance receivers, the system includes infrared band scanning receivers capable of detecting missiles and aircraft by their heat radiation.

Additional components of the complex include automated active jamming devices and automatic devices for releasing dipole reflectors and infrared traps.

The combat aircraft airborne installation also includes antiradiation missiles. In addition to the first antiradiation missile, the Shrike, developed in 1964 in the United States, today's arsenal includes new American missiles of this type -- Arm and Standard Arm, the Anglo-French Martel AS-37 missile, and the West German Kormoran.

Electronic countermeasures complexes developed abroad show a tendency toward a substantial increase in the role of automation, based on small computers. Work is proceeding on the development of adaptive jammers, which can automatically tune themselves to the working frequency of the radio-electronic devices to be jammed.

Ambitious efforts are proceeding for the development of electronic countermeasures installations for strategic bombers, designed primarily to disrupt intercept guidance of missiles and fighter-interceptors. Some representatives of the U.S. military establishment claim that in order for strategic bombers to penetrate a future air defense system, not so much new bombers as devices permitting such penetration will be required.

Lightweight, small, inexpensive one-time-use jamming transmitters are being developed, which would be automatically released to descend by parachute. They would have a power output of only a few watts, which is considered sufficient to disrupt radio communications, air defense radar and radio detonators. Such a transmitter would operate for two or three minutes. Possibilities are being studied for increasing transmission time to 30 minutes and transmitter output to 40 watts.

It is planned to protect aircraft from missiles guided by infrared homing devices by releasing a number of decoy targets and reducing engine heat radiation.

With the aim of quick readying of aircraft for a combat mission, electronic countermeasures devices are beginning to be placed in containers and hung under fuselages or under wings in place of bombs, missiles, or fuel tanks. In addition to jamming transmitters, the container carries a power supply (usually an airstream-impelled turbogenerator). By the end of 1969 the United States had manufactured approximately 1000 electronic countermeasures containers.¹³

Nor are foreign countries ignoring the use of passive jamming techniques. Special rockets and automatic devices with electromechanical, pneumatic and pyrotechnic drive systems are employed on aircraft to release radar-cluttering chaff. These automatic devices can also be used to release infrared traps and miniature one-time-use jamming transmitters. This automatic equipment is being updated in order to produce the capability of cutting chaff on board the aircraft to the required dimensions, depending on the operating wavelength of the radars to be jammed. Scattering through the air, the chaff forms swarms of dipoles which generate reflection interference. Long strips have also been developed for the purpose of producing passive radar jamming across a broad band of wavelengths.

Aircraft designers take measures to reduce effective reflective surface, which makes it easier to conceal aircraft against radar detection with electronic countermeasures and to protect them against homing missiles.

They are continuing to mount on board surface ships and submarines anti-radar reflectors, means of producing active and passive jamming, decoy radar targets and infrared traps fired by rockets and mortars, sonar jamming devices and decoy sonar targets, for the purpose of confusing sonar and hydrophone operators.¹⁴

Systems are also being developed to divert radio-controlled missiles from surface units and submarines. Since ships travel much slower than aircraft, dipole chaff released in packets (containers) by special rocket launchers is extremely effective for protection against missiles.

Not only special ships (the United States has about 80 electronic countermeasures ships) but regular combatant types as well are beginning to be equipped with electronic countermeasures gear. Electronic intelligence gear employed on naval ships is designed to give warning of missile attacks, to determine the moment when electronic countermeasures gear should be switched on, and to control jamming transmitters.

A standard system consisting of electromagnetic radiation detection gear, equipment to warn of radar contact, equipment for signal identification and automatic generation of simulating and noise interference is being developed for installation on board U.S. naval ships. The possibility of guiding hostile missiles to shipboard jamming transmitters is eliminated by

simultaneously operating transmitters on two or several ships. The possibility of installing airborne electronic countermeasures gear on board surface units is being studied.

In ground forces it is planned to employ jamming equipment against radio communications, particularly communications used to control field artillery, antiaircraft artillery and missiles.¹⁵ Some firms have begun developing response jamming transmitters for disrupting radio communications. At the present time the U.S. Armed Forces have approximately 150 models of electronic intelligence and electronic countermeasures gear. An additional 50 are in the development stage.

Considerable attention is being focused on seeking means and methods of jamming new types of radioelectronic equipment: equipment employed by aircraft in contour flying, satellite communications, electronic-optical intelligence-gathering equipment, missile guidance and night troop control equipment. An extensive effort is under way to design jamming equipment for use against radioelectronic gear employing new principles of operation: phased-array radars, stepped frequency change, and single-pulse radar. The principal trend in development of electronic countermeasures gear is development of means of combatting radioelectronic equipment the development of which is possible in the near future, in place of simple response to currently-operational gear.

Another trend in technical policy in the development of electronic countermeasures gear is a gradual integration with other radioelectronic equipment. The idea is to have multipurpose equipment in which the same elements are used simultaneously to perform several functions in different systems. Such equipment employs phased-array antennas, integrated circuits, solid-state components and computers. The employment of identical components in multipurpose equipment simplifies design, reduces size and increases equipment reliability.

An intensive effort is also being conducted abroad in the area of electronic countercountermeasures (improvement in the resistance of radioelectronic gear to jamming) as a third component part of electronic warfare. Total expenditures on antijamming equipment have increased from 10-20 to 50 percent in recent years in comparison with the cost of the electronic gear proper.

Particular attention is being devoted to protection against noise-interference jamming, as the most highly-developed type of electronic countermeasures. Automatic gain control circuits are extensively employed; steps are being taken to increase the dynamic range of radio-receiving equipment and to reduce the size of side lobes; signal coding is being employed, as well as change in emission polarization and rapid change of operating frequency. Some electronic gear employs stepped frequency

change from one pulse to the next for protection against jamming. In case of successful radar jamming, equipment is provided with the capability of tracking on the basis of jamming-source angular coordinates.

An examination of major trends in electronic warfare indicates that the means and methods of electronic countermeasures are becoming increasingly sophisticated. This makes it necessary to seek new countercountermeasures. Thus at the present time an unremitting struggle is under way to control the airwaves.

FOOTNOTES

1. From materials published in the foreign press.
2. Driano: Forces Aériennes Françaises, June 1958, pp 779-808.
3. Irving Kheymont: Takticheskaya razvedka v sovremennoy voyne (Tactical Reconnaissance in Modern Warfare), Voenizdat, 1963.
4. B. Karpovich: "PET -- an Electronic Ear," Sovetskaya Rossiya, 22 September 1968.
5. R. Khoman: "America's Electronic Spies," Za Rubezhom, No 20 (465), 1969.
6. Kheymont, op. cit.
7. S. A. Vakin and L. N. Shustov: Osnovy radioprotivodeystviya i radiotekhnicheskoy razvedki (Fundamentals of Electronic Countermeasures and Electronic Intelligence), Izd-vo Sovetskoye radio, 1968.
8. Space/Aeronautics, Vol. 92, November 1969, pp 56-64.
9. L. G. Shirshov: Ioniziruyushchiye izlucheniya i elektronika (Ionizing Radiation and Electronics), Izd-vo Sovetskoye radio, 1969.
10. Thomas B. Peters: "Electronic Warfare," Wehr und Wirtschaft, May 1969, page 297.
11. Space/Aeronautics, November 1964.
12. Space/Aeronautics, April 1960, page 120.

13. B. Miller: "Electronic Warfare," Aviation Week, September 1969; Space/Technology, Vol. 31, 1969.
14. Aviation Week, July 1968.
15. Electronics News, December 1969.

CONCERNING THE DENSITY OF ARTILLERY¹

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The theory of optimal artillery density requisite to neutralize the enemy's defense in the breakthrough areas of combined-arms large units when military operations involve solely conventional weapons, has become quite widespread today. This theory is based on the position that one of the most important conditions for penetrating an enemy's defense is concentration of a specific number of pieces per kilometer of planned breakthrough area.

In our opinion the establishment of rigid limits of required artillery density for breakthrough is excessively schematic and can lead to a situation whereby in one combat situation there will be an excess and in another situation a deficiency of artillery. In the former case one could evidently expand the area of breakthrough successfully, while in the latter case one must deal with the possibility of insufficient neutralization of the enemy in the given area. Of course we are dealing here with an artillery density index which is utilized in operational-tactical computations under conditions whereby one lacks sufficiently complete data on the enemy. Nevertheless the problem in our opinion is not so much artillery density proper as the achievement of a neutralization of the enemy's defense in the period of preparation fire whereby the motorized infantry and tanks of the attacking force will be able to effect penetration. Effective neutralization of a defense is determined by many factors. In this article we shall examine those which exert the greatest influence on establishment of the required artillery density.

The principal criterion is the width of the defense frontage of enemy forward-echelon subunits. We shall see how this circumstance (assuming that the other factors remain unchanged) affects artillery density. As is well known, a Bundeswehr mechanized battalion defends a zone 2-3 km in width (similar standards have been adopted by the other NATO nation armies). Let us assume that a commanding officer intends to penetrate the defense in a sector defended by two battalions, the reduced target area in which with artillery fire neutralization comprises approximately 150 hectares (75 ha per battalion).² In addition, artillery must hit targets (objectives) sited at defense depth in a total area of, let us say, approximately 70 ha (batteries, command posts, etc). Thus the total area of targets to be delivered preparation fire in the zone of interest to us will be 220 ha. If we assume in turn that during the period of preparation fire each piece is capable on the average of neutralizing targets within an area of 0.4 ha, then we shall require approximately 550 pieces to accomplish the mission.

In case both enemy battalions defend in a 4 kilometer sector (2 km each) without gaps between them (variant I), then their neutralization during preparation fire prior to the attack will require an artillery density of approximately 140 pieces per km. If these same battalions defend a sector of 7 km (3 km each with a 1 km interval -- variant II), then it will be sufficient to secure an artillery density in the order of 80 pieces per km.

It may happen that each of these battalions is defending on a frontage of 4-5 km (secondary axis, terrain conditions favorable for defense, etc). Then in view of the fact that in a war waged with conventional weapons it is advisable to penetrate the defense at the weakest point, accomplishment of the mission will require the same number of pieces as in the preceding examples (550). Density of artillery, however, will be considerably less. For example, if the frontage of the defense sector of both battalions is 10 km (together with gaps -- variant III), the required density of artillery will be only 55 pieces per km.

Air strikes are involved as well as artillery in preparation fire for an attack. Of course if aircraft hit all or a certain number of enemy artillery batteries, this will reduce the required artillery density. Let us assume that hostile artillery batteries occupy 60 ha of the total area of targets being neutralized at defense depth. If we assume that some of them (36 ha) will be neutralized by air strikes, the above-specified quantity of artillery (550 pieces) can be reduced by 90 pieces (36 ha:0.4 ha/piece). In connection with this the artillery density for the above variants will respectively diminish to 115, 65, and 45 pieces per km.

The enemy's defense on a certain axis can be penetrated by one or two tactical large units. If we assume that two large units are operating in the area of breakthrough, they may be compelled to engage the same quantity of hostile artillery as in the preceding examples (in an area of 60 ha). Naturally under these conditions the artillery of each large unit will deliver fire not on 10 but on only 5 hostile batteries (if some of these targets are not taken by air strikes). This means that the quantity of required artillery will diminish by 75 pieces and will total 475 pieces. Under these conditions artillery density for these variants will be 120, 70 and 50 pieces per km.

The next factor influencing artillery density is duration of preparation fire and the related problem of ammunition consumption. This influence is expressed in a persistent endeavor to reduce the period of artillery fire activity. In many cases the duration of preparation fire and ammunition consumption will differ substantially from those assumed in our illustration. For example, consumption of ammunition may be less, but the number of pieces and density of artillery will increase. And in like measure on the contrary, if ammunition consumption increases, density of artillery will diminish.

This can be illustrated as follows. If, for example, we increase the fire effectiveness per piece from 0.4 to 0.5 ha, we can accomplish our mission with 440 instead of 550 pieces. Artillery density with the above-specified variants will be 110, 65 and 45 pieces per km respectively.

Of course these figures can change if, for example, air strikes are involved in the penetration effort or if penetration is effected by two large units in a single sector.

In the last war there were frequent cases where vigorous action taken by the defending force thwarted or weakened the preparation fire of the attacking force, and the artillery density established in the area of breakthrough proved insufficient for a successful offensive operation. In this connection we must acknowledge that anticipated enemy opposition is also one of the most important factors determining requisite artillery density.

Nor should one forget that the nature and quality of the enemy's defense is of great importance for this problem. Defense, according to the views of NATO leaders, can be position or maneuver defense. Depending on the time available to the enemy, the degree of position fortification and preparedness of fire system will vary. In addition, subunits defending in the forward position may be at full or at partial strength (as a result of casualties sustained). State of training and morale can also vary. In the last war these factors exerted very substantial influence in determining the required degree of effectiveness or density of fire, which in turn affected the quantity and density of artillery. We feel that this factor is just as important today.

Presently-adopted standards of ammunition consumption to destroy separate targets reduced to sectors essentially correspond to the structure of the defensive combat formations of the subunits of our potential adversaries. One should not assume, however, that in the future the enemy will not alter the structure of his troops. It is quite possible both from a tactical and technical standpoint, for example, that artillery batteries in fire positions will be sited by platoons or even by single pieces. In such a case engagement of this artillery will require a substantial increase in ammunition consumption, which in turn will affect both quantity and density of artillery as a whole.

According to present practice, if the attacking force possesses little artillery, duration of fire and thus consumption of ammunition is increased, while battalions (batteries) are each assigned two and more targets (areas) to neutralize during the period of preparation fire. Depth of effective fire on enemy personnel and weapons is also reduced. We feel, however, that such techniques (particularly the latter) should be avoided if one is dealing with a strong adversary, although one can assume that

they may occur under forced conditions, particularly on secondary axes.

Considerable influence on artillery density is also exerted by the caliber of the weapons involved in preparation fire. It is a well-known fact that today's armies are equipped with a large number of tanks and armored personnel carriers (combat vehicles). It is best to employ heavy artillery against them (from indirect fire positions), since mortar fire (particularly 82 mm) is little effective, while rocket-launching artillery fire at small concealed targets, particularly those sited close to the FEBA, presents a danger to friendly troops or is also little-effective.

If heavy guns comprise a significant percentage of the artillery employed in preparation fire, the fire capabilities of such a force will be considerably greater. In such a case fewer pieces will be required than when the majority are medium-caliber guns and mortars.

Up to the present time we have examined the problem of artillery density in the area of breakthrough without consideration of securing the flanks of the attacking troops. In actuality the fire neutralization area should always be wider than the area of breakthrough. It is normally assumed that during the period of preparation fire targets sited on the flanks of the area of breakthrough are neutralized if they can directly affect the attacking troops with their fire. It follows from this that the area of fire neutralization should be at least 2-3 km wider than the area of breakthrough (by 1-1.5 km on each flank).

From the standpoint of reducing the requisite artillery density it is most advisable to effect penetration with two large units in a common sector. This will require cover fire on the flanks of only one rather than two sectors, which would be the case if the two large units penetrated the defense in different, separated sectors.

It follows from the above discussion that, depending on the factors we have mentioned, artillery density in the area of penetration can vary within rather large limits (from 45 to 140 pieces per km). Under actual conditions this difference may be even greater. Therefore one naturally asks: does it make sense in establishing the approximate artillery requirements for penetration to consider artillery density?

Of course in principle this question can be settled fairly simply. It is sufficient merely to recall that a specified density of artillery must be established to penetrate a defense, particularly if someone has already made the requisite computations for us and we can use them as a ready formula.

The author of this article, however, is firmly convinced that currently-established artillery densities for a penetration can serve the combined-arms commander only as a rough or approximate standard, determining what number of pieces per km can be considered adequate for the successful conduct of the offensive operation. Of course such a standard should approach its upper limit. This will evidently be correct if the range between the maximum and minimum number of pieces is not very large.

A deeper analysis of these examples indicates that the maximum difference in density of artillery, comprising more than 60 percent, is the consequence of a varying width of enemy battalion defense frontage (for 2-3 and 4-5 km density is 140, 80 and 55 p/km respectively; if 140 p/km is taken as 100 percent, a density of 55 p/km will comprise 38 percent). The other factors we have discussed exert considerably less influence on density of artillery (approximately 10-20 percent).

Thus in order to avoid a substantial error it would seem advisable in operational-tactical computations to adopt as a basis not density but the relatively constant number of pieces required to neutralize one enemy motorized infantry battalion. In determining this number one should take into consideration the most typical conditions (with the exception of battalion defense frontage width), as well as (in corresponding proportion) those targets sited at defense depth in the area of breakthrough.

In our illustration we have conditionally assumed that the "vulnerable area" of an enemy motorized infantry battalion totals 75 ha, while that of targets sited at depth is 35 ha per battalion; thus we have a total of 110 ha. If we assume that one piece is capable of neutralizing 0.4-0.5 ha during the period of preparation fire, 200-250 pieces will be required to neutralize targets in the sector of one battalion (taking into account those sited at defense depth) or, for the sake of brevity, simply for battalion neutralization. These figures can be recommended to combined-arms commanders as an approximate standard in computing artillery requirements for preparation fire prior to an offensive operation. In other words the combined-arms commander who intends, for example, to penetrate the defense in a sector defended by 2 battalions should employ 400-500 pieces in preparation fire (according to our conditional calculations).

This method, in addition to the fact that it makes it possible to determine with greater accuracy the required number of artillery pieces for a breakthrough, possesses other virtues as well. First of all these figures are just as easy to memorize as are artillery density values. If the need arises they can also be used to compute artillery density. For this it is enough merely to determine the width of battalion defense frontage (3 kilometers for example) and to divide this figure into the number of pieces required for its neutralization (in our illustration 200-250 pieces: 3 km = 66-83 p/km).

We should note that width of breakthrough area is not so important for higher command echelons (that is whether an area of penetration will be several hundred meters wider or narrower). This problem becomes important primarily for the commanders and staffs of those combined-arms large units (units) which will be penetrating the enemy's defense, for the artillery headquarters involved in specific fire planning, as well as for the battalions (batteries) performing the fire missions.

Thus knowledge of the actual (precise) width of the area of breakthrough begins to acquire importance only at the tactical echelon, during the period of refining offensive operation missions. It is not so important for the operational echelon or at the beginning of planning combat operations.

The above discussion is of importance not only for combined-arms but also for artillery commanders, for artillery engages concrete targets, not "kilometers." Determination of the number of pieces required to neutralize a specified target (battalion) becomes more understandable and in addition makes it possible to make rapid preliminary calculations of the duration of fire, as well as to determine a preparation fire timetable and consumption of ammunition, which cannot be done if only density of artillery is known.

We should add that regardless of how combined-arms commanders solve this problem, missile troops and artillery commanders possess proven methods of determining artillery fire capabilities and are capable (particularly when employing calculators or electronic computers) of quickly performing all the necessary calculations. Therefore this problem pertains merely to approximate standards designed primarily for utilization by combined-arms commanders and staffs. (Translated by: Col I. Andrushkevich)

FOOTNOTES

1. Mysl Wojskowa, No 4, 1971.
2. The figures and calculations presented in this article are merely for purposes of illustration and should not be construed to be ready-to-use data.

THE DEVELOPMENT OF MILITARY TERMINOLOGY¹

Reader Responses

The problem of military terminology today is a matter of some urgency. The development of military science and the rapid increase in sophistication of armed forces hardware have resulted in the development of a great many new terms and expressions. But due to haste, and in a number of cases due to a lack of understanding as well, one observes incorrect use of terminology, distortion in interpretation or redundancy, as well as attempts at arbitrary borrowing of foreign terms, which makes new terms more difficult to memorize and assimilate.

The criticism of military dictionaries made by Col. Nadirov in his article is justified. But it is not fair to blame all shortcomings solely on the authors of the dictionaries. They have done much to standardize military terminology. In spite of the gaps and omissions, these dictionaries are still being used today. In addition one should consider that some dictionaries have long been out of print, such as the Kratkiy slovar' operativno-takticheskikh i obshchevovennykh slov (terminov) (Concise Dictionary of "Operational"-Tactical and General Military Terminology), compiled by a team of professors and instructors at the Military Academy imeni M. V. Frunze. This dictionary was published in 1958, when the military-technical revolution was just beginning.

Colonel Nadirov notes that field manuals and regulations are issued in a sporadic fashion, less frequently than changes occur in military terminology (page 68). We can agree with him as far as certain terms are concerned. The core of military terminology, however, changes much more slowly than do field manuals and regulations. For example, the terms "nastupleniye" [offense, offensive, attack], "oborona" [defense], "marsh" [march], "vstrechnyy boy" [meeting engagement], "ataka" [assault, attack], and "razvedka" [reconnaissance, intelligence] have long been in existence, and yet during this time many service regulations, manuals and various texts have been issued and revised. The content of military terms is based on field manuals and service regulations, on approved data of military science and technology. The deeper and broader the scope of elaboration of military science, the richer and more diversified its terminology becomes. Obviously we should be emphasizing not so much those partial changes in basic terminology as a regularized handling of the steady inflow of new terms (corresponding to new concepts) and the change in meaning of old terms, caused by the continuous development of the military-technical revolution.

We agree with the author that considerable work remains to be done on such fundamental terms as "vovennaya nauka" [military science] and "vovennoye iskusstvo" [art of war] (page 63), and not only by dictionary

compilers, but first and foremost by teams of professors and instructors at the service academies, where most of our military scientists are located, as well as the General Staff Military Science Administration, the Central Military Technical Information Institute, the Ministry of Defense Institute of Military History, military scientific societies and all other army and navy scientific research establishments.

Recent debates in the military press and at scientific conferences have not fully plumbed the theoretical depths of problems pertaining to military science. For this reason they have not been properly reflected in our military dictionaries. Under the conditions of the military-technical revolution, military science proper with its constituent parts is continuing to develop rapidly, introducing many new elements into the content of the above-specified problem.

On the other hand we cannot agree with the comments by the author of the article that our dictionaries do not explain the definition of such terms as "dinamichnost'" [dynamic nature], "skorotechnost'" [fluidity fast-moving nature], "neravnornost'" [nonuniformity], "nepriyvnost' boyevikh deystviy" [continuity of combat operations], "tverdost'" [firmness], "gibkost'" [flexibility], "operativnost'" [flexibility, operational efficiency] and many others (page 65). In our view the above terms do not require special explanation or interpretation: they are either generally acceptable terms or their meaning can easily be found in any dictionary of standard Russian. The question of abbreviations and conventional symbols employed in military literature is another matter. They should be published as an appendix to a dictionary. Under conditions of modern combat operations, when every second counts, one cannot disregard a well-elaborated system of abbreviations.

One final comment. When the author discusses the development of military terminology he only mentions in passing the military language as a whole which, constituting an organic part of standard literary Russian, serves as an important vehicle of communication. Military language is inseparably linked with the operational-tactical thinking of command personnel. The decisive character of modern combat operations, the speed and fluidity of their development as well as abrupt situation change in the course of combat also impose greater demands on military language, its semantic precision, definiteness and brevity.

In all other matters we support the author and are of the opinion that regularization, standardization and the further development of military terminology will be promoted primarily by preparation and publication of a unified dictionary, and even better -- the early publication of the Soviet Military Encyclopedia, which subsequently should be supplemented, following the example of the Great Soviet Encyclopedia, by periodic

publication of a supplement volume for new terms, changes in and additions to definitions.

Col (Ret) P. Trifonov

* * *

At a get-together with writer and reader activists at the offices of the journal Voyennaya Mysl' in January 1970, Mar SU M. V. Zakharov quite correctly stated the need to "purge" our military language, "for terminology is the building material of every science, including military."²

Every science or field of human activity systematically accumulates requisite terms for designating specific phenomena, facts, and circumstances. It frequently occurs that another science or area of human activity, finding acceptable a given "alien" term, adopts that term, but always with the addition of an appropriate attributive or another definition. For example, Karl Marx, taking the military term "armiya" [army], wrote about the "army of unemployed." Today we frequently employ the term "army of scientists," "army of construction workers," etc. Military science in turn has adopted many terms from other areas of knowledge and activity. "Voyennoye iskusstvo," "voyenny inzhener" [military engineer], "voyenny ekonomist" [military economist] and other terms arose in this manner, and this is to be expected.

There are some terms, however, which are not scientifically justified. They frequently are the product of a hasty decision. Such, for example, is the term "tyl Tsentra" [rear services of the Center], which is defined as the higher, strategic echelon of the armed forces rear services. As we all know, the armed forces rear services consist of three echelons: voyskovoye [troops], which is under the tactical echelon of command; operativnoye [major tactical or minor strategic] -- major tactical command, and strategic, under the higher military command. It would seem that this structure is quite logical and clear, that a rear services echelon corresponds to each area of the art of war. Nevertheless some individuals endeavor to put too broad a content into the term "strategicheskiy tyl" [strategic rear services], defining this term as the entire nation with all its economic resources. This produces a situation which is unacceptable to Soviet military science: since the strategic rear services comprise the entire country, then the strategic echelon of command, which supervises the strategic rear services, also governs the country.³

In this country politics directs all areas of activity, including economics and strategy. Strategy supervision covers all those resources transferred to the armed forces from the economy. The strategic rear services handle all material resources under the higher military command. Therefore we

feel that we should discard the term "tyl Tsentra" as erroneous. There is no better term than "strategic" for the highest rear services echelon. This term quite logically derives from the structure of our military organizational development.

Maj Gen (Ret) A. Lagovskiy,
Professor, Doctor of Military
Science

* * *

The article by Col Yu. Nadirov entitled "Development of Military Terminology" initiated a very useful discussion on standardizing and improving military terminology. The first response was an article by Engr-Lt Col V. Prokoptsov, in which the author discusses the terms "dezaktivatsiya" [radiological decontamination], "degazatsiya" [gas decontamination], and "dezinfektsiya" [bacteriological decontamination] of equipment and draws the conclusion that these terms are obsolete (also obsolete in his opinion are generalized terms pertaining to these processes -- "obezzarazhivaniye" [decontamination] or "spetsial'naya obrabotka" [special decontamination]). On the basis of these deliberations he proposes a new generalized term, "spetsial'noye obsluzhivaniye tekhniki" [special servicing of equipment].

We can hardly agree with these proposals, particularly since the terms "degazatsiya," "dezaktivatsiya," and "dezinfektsiya" are members of a large group of analogous terms employed not only in the military but also in the civilian technical vocabulary; they include such terms as "insect extermination," "rat extermination," etc. Of these terms, "dezaktivatsiya" is unfortunate only in a physical sense, since no destruction of radioactivity takes place, but rather a process of removal of radioactive substances from surfaces. On the recommendation of CEMA, our literature is more and more frequently employing the term "dekontaminatsiya" [decontamination], which means "removal of contamination." In particular, it has been incorporated into the current draft GOST "Protective Equipment and Gear for Working with Radioactive Substances and Sources of Ionizing Radiation. Groups, Terminology, and Definitions."

We feel that the presently-used general terms "obezzarazhivaniye" and "spetsial'naya obrabotka" are entirely appropriate. The proposed term "spetsial'noye obsluzhivaniye" is vague and carries no indication of the processes for which it stands. Nor should one ignore the fact that the adoption of every new term immediately leads to the obsolescence of a number of documents containing the measures referred to by the terms, and it does not always have a positive effect on personnel training, since it is necessary to overcome the habit of employing the old term.

We agree with Colonel Nadirov that efforts to improve military terminology will make it possible in the future to publish a Soviet Military Encyclopedia. This is the position taken by the staff of the journal Morskoy sbornik, which carried a useful discussion on naval terminology.⁴ We feel that a broad exchange of opinion on this topic will produce nothing but positive results.

Engr-Capt 3rd Rank G. Rudenko

FOOTNOTES

1. Col Y. Nadirov: "Development of Military Terminology," Voyennaya Mysl', No 6, 1970; Lt Col V. Prokoptsov: "Response to Yu. Nadirov's Article," Voyennaya Mysl', No 7, 1970.
2. Voyennaya Mysl', No 3, 1970, page 92.
3. The editors feel that the question brought up by Comrade Lagovskiy requires further investigation.
4. Morskoy sbornik, Nos 2 and 8, 1970. Articles by Rear Adm A. Gontayev: "Military Terminology, Dictionaries and the Encyclopedia"; R. Poretzskoy: "A Philologist Speaks."

THE 50th ANNIVERSARY OF THE PERIODICAL VOYENNY ZARUBEZHNIK*

The journal Voyennyy Zarubezhnik is celebrating its 50th anniversary. Founded in 1921 as a publication of the foreign military press division of the military scientific society attached to the Military Academy imeni M. V. Frunze, it soon won recognition among the troops, at this country's service schools and central military establishments. The journal was published with a minor interruption almost up to the outbreak of the Great Patriotic War. Publication was resumed after the war, and in July 1956 it became a monthly central publication of the Ministry of Defense USSR.

The journal based its activities on Lenin's statement pertaining to the importance of studying the enemy. Lenin wrote: "Everyone will agree that the behavior of that army which does not prepare to master all types of weapons, all means and methods of combat which the enemy possesses or may possess, is foolish or even criminal" (Poln. Sobr. Soch. [Complete Works], Volume 41, page 81). This emphasis enabled the journal to accomplish its mission fairly effectively: assisting the young Red Army, with its articles, reviews and recommendations, in improving its organization and troop combat training.

An editorial in Voyennyy Zarubezhnik dedicated to its third anniversary emphasized that the journal's mission was to serve the cause of Red Army organizational development and to discuss foreign military thinking and the achievements of foreign armies. We should note that periodicals and books at that time contained a variety of conflicting and in many cases erroneous conclusions from the experience of World War I. It is to the journal's credit that it published the most valuable and useful recommendations of a theoretical and practical nature for utilization in our Armed Forces.

At the same time Voyennyy Zarubezhnik was keeping a close watch on foreign army preparations for a new war and was endeavoring promptly to warn its readers about the aggressive intentions of the military and political leaders of the imperialist nations.

The journal was extremely helpful in the thirties to command cadres in critical assimilation of the experience of foreign armies in organizational development and training. This period, as is well known, was characterized by an aggravation of the international situation and by intensified war preparations on the part of the imperialist states. At that time the Red Army was faced with the critical problem of strengthening its combat might, technological upgrading and of course a more detailed study of the armies of the potential adversaries. The articles published by the

* Foreign Military News

journal in these years are distinguished by thoroughness of analysis and an extremely objective appraisal of the achievements of foreign armies, while the recommendations and advice elaborated on this basis, on problems of improving our country's Armed Forces, were extremely useful. The journal's popularity with the military reader in those years is indicated by its increased circulation, which rose from 2000 to 15,000 copies.

In 1940 the journal temporarily ceased publication; publication resumed in the mid-fifties. The editors always strive, in addition to acquainting the readers with foreign armies, to give extensive coverage to the peaceful policy of the Soviet Union. This is extremely important, because militant elements in the bourgeois nations launch various slanderous attacks against our country, distorting its foreign and domestic policy for the purpose of deceiving the public.

The journal employs the most diversified methods and forms: it publishes editorials and special survey articles, including on international military-political topics, editorial commentary on the translated articles of foreign authors, and prints statements by capitalist political and military leaders which are distinguished by objectivity in appraising the strength of our country and its armed forces.

The journal is constantly guided by the deathless Leninist heritage in accomplishing the tasks of struggle against bourgeois ideology. This was particularly clearly revealed on the eve of the birth centennial of the great leader of the proletarian revolution, V. I. Lenin, during the period of preparations for the 24th CPSU Congress, and at the present time, when this country is successfully accomplishing the tasks specified by the congress.

Articles published in Voyenny Zarubezhnik in honor of the Lenin Birth Centennial deeply reveal the content of Lenin's doctrine on defense of the socialist homeland and conclusions drawn by Lenin on the reactionary essence of imperialism and its policy of violence and international brigandage.

It was emphasized at the 24th CPSU Congress that in the postwar years the growth of militarism has been taking place in the capitalist world on an unprecedented scale and that imperialism's war against peace-loving peoples is continuing unchecked. Hence military command cadres have the mission of doing everything possible to strengthen the army's combat might, to improve their knowledge of military theory and to study the strong and weak points of the potential enemy.

Voyenny Zarubezhnik is very helpful to Soviet Army and Navy officers, general officers and admirals in this respect. It regularly publishes

articles reflecting the aggressive nature of organizational development and combat training of the armed forces of the NATO, CENTO and SEATO military blocs as well as the members of these alliances.

The journal directs the cutting edge of ideological struggle at exposing the ideology and military policies of the major imperialist states. In particular, a number of articles have rather persuasively disclosed the aggressive nature of the strategy and tactics of U.S. imperialism, the crisis of U.S. military policy and the reasons for the failure of U.S. intervention in Vietnam. In order to increase the vigilance and combat readiness of the Soviet Armed Forces, the journal regularly discusses major events and facts characterizing the aggressive nature of imperialist circles in the capitalist nations.

The journal's importance also lies in the fact that it regularly publishes materials from the foreign press on general problems of war and the military science of foreign countries. In particular, it promptly notes changes in the views of the military leaders of imperialist states on modern armed forces organizational development, on the character of a future war and the methods of waging such a war.

The editorial staff of Voyenny Zarubezhnik holds reader conferences in military units, training institutions and central directorates of the Ministry of Defense. These make it possible to find out what the readers want and to adjust the subject matter handled by the journal, to attract a large number of contributors, and enable the readers more fully to convey their wishes and desires to the editors.

One generally-acknowledged virtue of this journal is the fact that it regularly publishes materials on operational art and tactics of the armies of the capitalist nations, the organization and armament of their large units, units and subunits, as well as interesting articles discussing the achievements of the imperialist nations in their military space programs and development of strategic weapons. One can also find other interesting materials on the state of various arms and services in the capitalist armies, organization of intelligence and sabotage-reconnaissance activities, combat support and supply, trends in the development of weapons, combat equipment, rear services, etc.

More and more contributors are submitting articles to Voyenny Zarubezhnik: officers, general officers and admirals from line units, military training establishments and central directorates of the Ministry of Defense. As regards articles by foreigners, we feel that it would be useful to acquaint our readers with the opinions of top-echelon officers in foreign armies, military theorists and military leaders.

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The journal has earned the right to be called a loyal companion and assistant of Soviet Army and Navy command cadres at all echelons.

Together with other publications, Voyenny Zarubezhnik helps form in officers, general officers and admirals of the Soviet Armed Forces a communist ideological outlook as well as their indoctrination in a spirit of Soviet patriotism and socialist internationalism, total dedication to the Communist Party and Soviet government, love for the socialist homeland and deep faith in the triumph of communism and the power of our arms; it helps Soviet command cadres study the potential enemy.

We wish the editorial staff of Voyenny Zarubezhnik continued success in accomplishing the tasks assigned our nation's Armed Forces by the 24th CPSU Congress.

INDOCTRINATING STUDENTS IN THE PROCESS OF THEIR TRAINING

(Problems of Indoctrination and Development of Young Officers)

Engr-Col N. Sal'nikov, Candidate of Technical Sciences, Docent

The task of indoctrination is one of the most difficult. The best educators consider it not only the task of science but of art as well.

M. I. Kalinin

The military technological revolution has introduced substantial changes into the means and methods of conducting combat operations and has imposed new demands on training military personnel. Personnel training encompasses such aspects as theoretical knowledge and practical skills, which guarantee optimal weapons utilization, and morale-political and psychological conditioning, which ensures the maximum effect from application of this knowledge and these skills. At the All-Army Conference of Young Officers Mar SU A. A. Grechko noted that problems of training and indoctrination, discipline and morale-psychological training have merged into an inseparable whole to a greater extent than at any time in the past.

Both theorists and practical workers have always devoted attention to the relationship between military training and indoctrination. The creative thinking of commanders, political workers, engineers and technicians has inalterably been focused on the search for new, maximum efficient methods, means and techniques of training personnel. This is indicated by articles published in Voyennaya Mysl'.¹ The problems they discuss are of current importance, and their content generates productive debate.

The principle of indoctrination in the training process, emphasized one article published in this journal, is entitled to its rightful place with other principles. Today it is impossible to teach without indoctrinating; one cannot first teach and then indoctrinate, or teach one and indoctrinate another.²

Young instructors of course are aware of this, but they do not possess sufficient experience. It will require considerable effort for them to master the methods and techniques with the aid of which this problem can be resolved in an optimal manner: the problem is complex and difficult; success is achieved individually, on a firm scientific basis, assimilated

and correctly utilized by the instructor. "The art of indoctrination," stated K. D. Ushinskiy, "possesses the peculiar feature that it seems familiar and understandable to almost all, and even easy to some.. But very few have arrived at the conviction that in addition to patience, innate ability and skill, special knowledge is required as well..."³

This article attempts to present in some measure specific proposals on techniques and means of indoctrinational effect by the instructor at the military higher educational institution on students during the learning process.

In providing a student with a higher education, the military training establishment exerts considerable influence on an individual. An officer's very presence within the walls of the military educational institution changes him for the better, for in addition to education, every military training institution engages in the indoctrination of its students. "...Indoctrination," stated M. I. Kalinin, "is specific, purposeful and systematic effect on the psychology of the person being indoctrinated, in order to develop in him qualities desired by the indoctrinator."⁴

We are certainly interested in what kind of young specialist is graduated from the military training establishment, and we naturally want him to be a specialist of the highest caliber, with the broadest engineering knowledge, for example. But this is not the only point. We are interested in what kind of an officer our graduate will be, to what extent a Marxist-Leninist ideological outlook will be developed in him, how he is prepared for the role of indoctrinator, what kind of a person he becomes, and what mark he will leave in the military and in Soviet society.

The military training establishment system provides an entire complex of indoctrinational effort, a complex of appropriate indoctrinational effect on the students. It encompasses diversified activities by the command, political workers, party and Komsomol organizations. In addition, there is a special category of officials (course supervisors), whose principal task is systematically to indoctrinate their subordinates. Another important problem within the system of student indoctrination is that of increasing the effectiveness of the indoctrinational effort of instructors in the student learning process. This is understandable if one considers the fact that they more than all other functionaries are in protracted and continuous contact with the students and for several hours each day are closely linked within the teaching process.

There is one other important aspect of this problem, to which the 24th CPSU Congress drew the attention of executive cadres and party organizations. The scientific and technological revolution is not erasing class boundaries and is not converging the ideological positions of the two world social systems. The forming of a Marxist-Leninist ideological

outlook, excellent ideological-political qualities and standards of communist morality in toilers continues to be the central task of the ideological effort of party organizations.⁵ Military indoctrination presupposes purposeful propaganda of communist ideals, their profound assimilation and transformation into concrete service deeds. The instructor in the Soviet higher educational institution cannot be indifferent to the way of thinking and acting or the heart of his pupils. There is no place in the higher educational institution for an indifferent person. Not every teacher, however, no matter how much he may try, succeeds in resolving the questions of training and indoctrination in an optimal combination. And yet the teacher who combines the qualities of teacher and indoctrinator is extremely valuable.

We recall a remarkable statement by V. G. Belinskiy on the role of the teacher: "Linked to the profession of teacher are great responsibilities for the successful meeting of which much knowledge, talent, skills and experience are required. The teaching method employed by the teacher determines not only the success or failure of his pupils but also their like or dislike of learning. The teacher with a poor grasp of his job may choke and crush in his pupil the seeds of the finest abilities and, driving out of him the desire to study, may make him incapable of anything. On the contrary the teacher who understands the importance of his obligation and possesses all the qualities necessary for the performance of these obligations not only develops, strengthens and properly orients natural abilities but even produces successful learning in those students who have not been bestowed intellectual ability by nature."⁶ In spite of the fact that this statement was made more than a century ago, it is valid even today. We military instructors should think about these statements. We must constantly bear in mind the moral-political influence of the teacher on his students.

What are the elements which form our system of indoctrinational effort, the indoctrinational effect of the military educator on the student? They are the following: high quality of class presentation; party-mindedness in teaching; the countenance of the teacher (his example); relationship with the students -- kindness, affability, demandingness; "pauses" for the purpose of indoctrination during lectures; study of the students -- preliminary and during the course; the teacher's activities outside of class, participation in the activities of student Komsomol and party meetings.

High quality (profound content, scientific level) of classes is ensured by careful and thorough preparation (visual aids, facilities, equipment, etc). What kind of positive indoctrinational effect can there be if even the most experienced instructor utilizes in his classes poorly-made posters, defective equipment, models and assemblies which refuse to function or

fail during demonstration, or if he has forgotten something and then later agonizingly remembers it when he is presenting the material?

A class is remembered and has an educational effect when form and content are organically joined, when everything of secondary importance has been eliminated, and when the main points are completely fresh. Of course this is possible only if the instructor constantly broadens his knowledge in the given field, keeps up to date on the latest scientific advances and follows the periodical literature.

It is important from a methodological standpoint for each class to be complete, solving a specific problem (group of problems), rather than "hanging in the air" due to poor planning. The experienced educator always asks himself before each class what new elements he will be giving his students.

In view of the present level of development of science and technology, the abundance of scientific information and its transience, it seems to us that in a high-quality class the students will not only and not so much be given concrete data, facts, as shown a scientific approach and methods used in solving the problem. This is what develops subsequently an officer's ability independently to deal with problems which he will inevitably encounter in the troops. The purpose of the military higher school is not only to give the student a sum total of specific knowledge but also to teach him to think innovatively, to arrive at correct practical conclusions on the basis of acquired knowledge.

Of course well-selected material will be correctly perceived by the students only when it is presented in a comprehensible manner.

High quality of classes, their deep content, and scientific level in combination with correct methods constitute that basis which enables the teacher to accomplish the tasks of teaching and positively influencing the students during the learning process.

Party-mindedness of teaching is one of the most important principles, encompassing a system of instructor methods and techniques which ensure the class orientation of classroom exercises, that is, presentation of material from the position of Marxist-Leninist ideology, from the standpoint of Communist Party policy, in a spirit of Soviet patriotism. This was reemphasized at a reception in honor of service academy graduates at the beginning of June of this year. Who if not we should be responsible for ensuring that service academies and schools graduate politically literate, ideologically convinced fighters for the communist cause?

Every military educator is not some collector of known book information who has an indifferent attitude toward the facts and phenomena he presents, but rather an active fighter for the party's cause, an impassioned propagandist of progressive ideas, achievements and know-how. He cannot be limited merely to the transmission of knowledge to his audience; his duty is to display his party attitude toward the information he conveys.

During the process of preparing for class the instructor, having gathered and systematized the requisite material, carefully analyzes it from the standpoint of its potential ideological influence on the students.

We know that it is not always easy to ensure party orientation of classroom activities. The most favorable conditions for this are during introductory and concluding lectures, when it is appropriate to draw attention to the preeminence of Soviet science and technology, to note the role of Soviet scientists and designers in developing the best weapons, to reveal the colossal capabilities of socialist industry, which is building first-class hardware for the army and navy, and to demonstrate the selfless labor and patriotism of the Soviet people, the guiding and organizing activity of the CPSU and future prospects for the development of science and technology.

During each class the instructor must find an opportunity for party influence, for forming in students an excellent ideological outlook, unshakable faith in the righteousness of our party's cause, feelings of Soviet patriotism and socialist internationalism, and excellent moral and political qualities. Unfortunately we must note that sometimes even military educators who have the wisdom of considerable teaching experience do not always attach sufficient importance to the party orientation of each and every class, considering this to be self-evident.

Environment and conditions are important, but one should not forget Lenin's thesis that ideas are introduced. But ideas must be introduced intelligently, without going to extremes. Some instructors, endeavoring to develop feelings of patriotism, in the area of technology, for example, loudly claim without sufficient scientific substantiation the priority of Soviet scientists in a given area of knowledge or inventions. I should like to state that we do not need any "party-mindedness" of this kind. The principle of party-mindedness in teaching is an empty sound without authenticity, proof, and a scientific approach to facts, events and phenomena.

A party-minded approach in the presentation of materials presupposes the objective treatment and evaluation of this material. This applies not only to priority in general but also to a presentation of the enemy, his weak and strong points, weapons, operational art, etc. Only a serious

analysis of the performance capabilities of Soviet in comparison with foreign hardware will enable these future specialists to focus their attention on unsolved problems and to add to Soviet achievements.

The personality of the instructor exerts enormous influence on his students.

The personality of the military instructor should be balanced in all respects. All self-respecting instructors strive for this, for every educator strives for a thorough knowledge of his subject and thorough preparation for his classes, is concerned with the ideological orientation of his actions, principles and party-mindedness in assessing various events and facts. He conveys knowledge to his students with great desire, conviction and enthusiasm.

It would be incorrect, however, to limit himself solely to the framework of his subject. In order to proceed in step with the time, it is essential to take a lively interest in contiguous disciplines and constantly to improve one's overall education. Arrogance and ego are the scourge of the educator; modesty is to the indoctrinator's credit. His conduct in the military collective, in the family and in daily routine should be simple and exemplary in all respects.

While one's inner countenance is not immediately noticeable, one's external appearance (such as observance of uniform regulations) exerts an effect from the very first encounter. Neatness and smartness of appearance in combination with competence and military-political knowledgeability constitute a powerful indoctrinational means. Chekhov made a most remarkable statement: everything should be beautiful in man: the face, clothing, the soul and thoughts express the essence of man's harmony, perfection and culture.

There is no question that the student is sickened by superficial elegance and affectation, but how precious and useful from an indoctrinational standpoint are smartness of appearance and precision, coolness and restraint, sparingness of words and excellent speech habits, the ability to control one's voice and gestures, the strictness and cordiality, demandingness and tactfulness of the educator.

A teacher is not born; the personality of the teacher is formed by the environment and by the teacher himself; his development takes years of painstaking, persistent labor. Improvement is limitless and requires one's entire life.

Students' endeavor to emulate their teacher, to follow him in their deeds, to copy his techniques and actions is an understandable and natural thing.

How important it is for the object of emulation to be a positive example! Mar SU A. A. Grechko, discussing the diversified and complex activities of the officer, noted that "his principal weapon and most important condition for successful performance of his duties and for influencing his men is personal example."⁷

The teacher's example is inseparable from his person, unity of word and deed, his high party-mindedness and military demandingness. His indoctrinating influence is constant -- during breaks between classes, during consultations, on practical production experience days, and in the process of tests and examinations. He is always visible to the students; they are familiar with his character, his habits, and his purely human weaknesses. The teacher also indoctrinates students with his conduct outside the walls of the training establishment -- on the street, at the theater, during recreational excursions to the country, on harvest assistance details, etc. This is particularly important under the conditions of military educational institutions which are situated in a small town or on a military base.

Teacher-student contacts are based on military service relations permeated by creative interests. An intense, businesslike atmosphere is necessary for mastery and assimilation of course materials. It is very important for the student from the very first contact to sense the teacher's kindness, to see and perceive (this of course takes time) that the instructor is not a dry dogmatist, not a proclaimer of unshakable truths and laws, but an experienced older comrade who helps in mastering the subject and in receiving an education.

It is a good thing when these relations are distinguished by mutual understanding, which does away with an "isolating" stone wall, affectation, and an attitude of superiority. But the other extreme is dangerous and absolutely unacceptable: currying favor, undue familiarity, the endeavor to be "one of the guys," although this type of instructor impresses some students.

The relationship between instructor and student is based on mutual trust and respect. It happens that a student commits a minor infraction, fails to prepare for a class or is even rude in the classroom. The instructor has considerable opportunity to correct such a student tactfully and calmly, without demeaning or insulting him. The indoctrinational effect will be more substantial than that produced by shouting or a dressing down, which merely alienate. A feeling of fear is not a feeling of respect.

Relations between the instructor and his students are always frank. This applies as well to cases when the instructor (young and inexperienced) is placed in a difficult situation by a question "from the floor." There is nothing worse than trying to "explain" something to the class when one does not know the precise answer. This is where it is appropriate to

display frankness (even courage), to admit that one does not know the answer but to present it at the next class meeting. "It is necessary," stated Mar SU A. A. Grechko at the All-Army Conference of Young Officers, "always to have the courage to admit an error. Admission of one's error and its prompt correction does not weaken the authority of the commander. There is nothing disgraceful in admitting one's mistake; on the contrary, it attests to one's courage."⁸

A certain cordiality and even friendliness is established between teacher and student: students share their problems with the instructor, discuss things and confide in him. The officer who succeeds in winning over his students exerts extremely favorable influence on them.

Frankness and friendship, however, should not weaken demandingness. Measure, balance, and tact are important in teacher-student relations. One can hardly count on full student conscientiousness in assuming that they will do everything within the framework conceived by the instructor. Their performance and behavior must be strictly monitored. The life of a military instructor, as that of the commander in general, is permeated with a high demandingness on himself and on his men.

The efforts of the student in the classroom are extremely intensive, requiring considerable mental, emotional and physical exertion. Experience indicates that it is advisable to introduce into the classroom session periodic pauses or breaks, which last 2 to 3 minutes. In some cases as much as 5 minutes can be devoted to these relaxation pauses. At least one such break should be taken in a 2-hour class. These breaks must be planned on the basis of place and time, and their content must be very thoroughly considered (prepared).

From my personal experience, teaching each year a course in the design of special equipment, I know precisely what questions and areas are particularly difficult for the students. One such difficult area is dynamic computation. Having presented a large number of new concepts and definitions, I note that the students are "saturated" and sense that the abundance of information is becoming a certain inhibiting factor in further assimilation of the material.

I then suggest that the students put down their notes and relate to them with what enthusiasm Doctor of Technical Sciences Professor Maj Gen Engr-Tech Serv Mitrofan Fedorovich Samusenko worked in the area of dynamic weapons research, how a given solution had been found, where a contribution had been made by students who have now become candidates and doctors of science, department chairmen and higher school instructors.

The officers listen very attentively to my story! Subsequently, in breaks between classes, at lectures and elsewhere (practical industrial production experience, in working on term and senior projects) they will ask me to tell them about the Academy imeni F. E. Dzerzhinskiy and about M. F. Samusenko, his school and pupils. The aroused interest and curiosity will compel them to open Samusenko's textbook; they will become enthusiastic about his scientific creativity, and they will come to the department to discuss various matters.

A direct and immediate effect is also produced: after such a break they develop increased interest in the material; it no longer seems like dry, uninteresting formulas but rather the expression of creative thinking worthy of emulation.

Another technique is also effective -- switching the students' attention to something "alien." For example, they listen avidly to everything pertaining to the area of interrelationships and culture.

People's Artist USSR S. Giatsintova once wrote an article which was published in Pravda entitled "What Does It Mean to Be Educated?" Soon thereafter I had an opportunity during a lecture break to refer to an example she had cited: "The homeless and indigent of Paris would come to the Louvre in the mornings to stand by the radiators and get warm. One morning an old lady warming herself was standing next to an artist working on a copy of a painting. The artist suddenly got up and brought a chair over for the old woman. The old woman bowed low in thanks and sat down. This scene was observed by a lady and her son. The mother whispered something to the boy. He walked up to the artist and said: 'Merci, Madame,' and then returned to his mother, his face beaming."⁹

You should have seen the reaction of my students; so many thoughts took shape in their mind; the noble act is so instructive! To do good to others is a great happiness.

In addition to all else, breaks bring commanders and their men closer together (in our case teachers and students) and make it easier to recognize individual characteristics. It has long been known that a class is easier to control if the instructor is acquainted with the individual students, if he knows their names, proclivities, etc. "Life itself teaches," it was emphasized at the All-Army Conference of Young Officers, "that it is impossible to be a good officer-indoctrinator if one does not know and fails to consider the specific features of one's men..."¹⁰

It is useful to begin individual study of the students prior to the first class meeting. From the standpoint of education science it is extremely

useful if at the first class meeting the students sense that the instructor is familiar with the audience and their individual traits. Close contact with the course supervisor and activists makes it possible to obtain much biographic data, to learn the personality traits of the students (modest, authoritative, possesses initiative, quick to anger, introvert, needs watching, etc) and to form a picture of an individual's development, his capabilities, service and life experience.

Meetings between the instructor, commander and secretary of the party organization of the department of studies help in studying the students and create conditions for establishing not only a businesslike and formal atmosphere in the classroom, but also an atmosphere of mutual understanding and respect.

Received information is refined and expanded during class sessions, a process which is promoted by periodic question and answer sessions; the students should not always be left during a break. An informal conversation on any subject of interest to the students brings the students and teacher closer together and creates a productive atmosphere. Comprising an important element in the system of education and indoctrination, such conversations also make it possible sometimes to find the way to resolve such complex matters as an objective assessment of student knowledge in examinations, assignment of topics for course and particularly senior design projects in conformity with their individual abilities, etc.

When students are performing scientific research activities in the Military Scientific Society, in course and senior design projects and during practical production experience, the instructor meets with the students in an informal situation, unrestricted by the rigid framework of the classroom lecture but nevertheless businesslike in nature. More protracted personal contact is established, during which there is an opportunity more fully to determine the preparation of the student, his methods of working on the course material, to become acquainted with his personal qualities, aspirations, and finally to talk "heart to heart."

It is necessary merely to caution the instructor against transforming such contacts into examinations. The instructor helps choose the area of future research and participates in the forming of a qualified military specialist. Frequently students remain true to that scientific road which they trod together with their mentors at the military higher school.

Assimilating the knowledge and know-how of the instructor and scientific methodology in problem solving, during this period the student is particularly receptive, easily indoctrinated, as they say, when the influence proceeds from the instructor. This should be utilized to instill in the student a sense of optimism, enthusiasm in scientific search, persistence

in solving the assigned problem, independence, a striving to assist his comrade and the ability soberly and objectively to assess the results of his labor.

The students' accustomed school environment changes during practical production experience; students are no longer under the direct supervision of superiors and for a certain period of time are operating under different conditions of learning and daily routine. Here the instructor supervises practical activity, the learning process, organizes party political effort and participates in intelligent planning of the students' free time. He performs the function both of teacher and older comrade, not only as a narrow specialist but also as a man who is wise in matters of art and literature, who is friendly and versatile, direct and optimistic. Carefully conceived and properly-organized practical activity contains great potential for indoctrination; students can obtain much from contact with top production personnel, whose hands build our modern weapons, as well as with the design engineers who work on scientific problems.

The instructor employs various forms and methods of contact with students in order to achieve indoctrinational effect: discussions and lectures; he actively participates in the activities of student Komsomol and party meetings. It is absolutely impermissible, however, to give a lecture or address on the basis of hastily-assembled material which is familiar to all. Consequently, careful preparation is essential. Here everything is important: selection of topic, thorough study of the subject, one's point of view on the subject, examination of the problem in connection with the practical affairs of the students, and finally the mood of the instructor.

When we speak of instructor participation in the activities of Komsomol and party organizations, this should not be defined solely as an address delivered at meetings on the items on the agenda. The very presence of the instructor, let alone his participation in the discussion, has an indoctrinational effect, for he is a senior comrade, a commander, a Communist.

Contact with the students is also very helpful to the instructor: he learns to know his men better, their needs and desires, listens to their requests and as an indoctrinator draws practical conclusions for himself.

In conclusion we shall state that the question of organic linking of training and indoctrination is not new. It has always been assigned an appropriate place in the activities of commanders, political organizers and staffs. Present attention to this question is not of transitory significance. It is dictated by radical changes in the hardware and methods of conducting modern combat operations. The military instructor must combine the qualities of teacher and indoctrinator. Subsequent

investigations and exchange of know-how will demonstrate how these qualities can be practically manifested. One thing is clear -- there are and can be no insignificant items in indoctrinational effort, it was emphasized at the All-Union Student Mass Meeting at the Kremlin, because we are dealing with one of the most complex and critical questions -- the forming of the soul and character, conditioning of the heart and mind of the Soviet patriot.

The indoctrinational effort of the instructor is multifaceted; it is extremely difficult to exhaust all its aspects in a single article. It is indisputable, however, that it constitutes that area containing great reserves, utilization of which will make a tangible contribution to the training and indoctrination of military cadres.

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From the editors. In this article Engr-Col N. Sal'nikov discusses important problems pertaining to the indoctrination of students during the learning process. The editors invite school faculty to share with our readers their experience and ideas on this problem.

FOOTNOTES

1. I. Yefremov: "Unity of Training and Indoctrination" (Voyennaya Mysl', No 9, 1968); A. Khorenkov: "Planning the Work Schedule of the Military Educator in a More Concrete Manner" (No 3, 1969); L. Zheleznyak: "Method of Studying Officer Military Occupational Orientation" (No 6, 1970); A. Stolyarenko: "Psychological-Pedagogic Matters Pertaining to Training Young Officers" (No 7, 1970), and other materials.
2. A. Stolyarenko: "Improving Theory of Military Training," Voyennaya Mysl', No 7, 1969.
3. K. D. Ushinskiy: Sobraniye Sochineniy (Collected Writings), Volume 8, Izd-vo Akademii pedagogicheskikh nauk RSFSR, 1950, page 11.
4. M. I. Kalinin: O kommunisticheskom vospitanii i voinskoy dolge (Communist Indoctrination and Military Duty), Voenizdat, 1967, page 426.
5. Materialy XXIV s"yezda KPSS (Proceedings of the 24th CPSU Congress), Politizdat, 1971, page 205.
6. V. G. Belinskiy: "My Thoughts..." (unpublished manuscript), See Penzenskaya Pravda, 11 January 1968.

7. Vysokoye prizvaniye. Vsearmeyskoye soveshchaniye molodykh ofitserov. Noyabr' 1969 g. (Lofty Calling. All-Army Conference of Young Officers, November 1969), Voenizdat, 1970, page 20.
8. Ibid., page 22.
9. Pravda, 25 February 1968.
10. Vysokoye prizvaniye..., op. cit., page 19.

WEAPONS OF MASS DESTRUCTION IN THE AGGRESSIVE PLANS OF NATO*

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The 24th CPSU Congress, analyzing the present international situation, noted that an unprecedented scale of militarization is presently characteristic of the entire capitalist world. During the last 5 years alone the United States has spent approximately 400 billion dollars for military purposes, while NATO, the most aggressive imperialist bloc, spent 103 billion dollars on war preparations in 1970 alone. All armed conflicts initiated by imperialism in the last 20 years have taken place with the direct or indirect participation of the NATO bloc. Aggressive NATO policy is supported by armed forces which have at their disposal the entire arsenal of modern weapons, a leading role among which is played by weapons of mass destruction. This is confirmed both by official U.S. and NATO military doctrine and by the character of equipping and training of their armed forces.

NATO armed forces in Europe possess approximately 2250 nuclear warhead delivery vehicles. Europe also contains a concentration of more than 7000 nuclear warheads, chiefly in the FRG.¹ We should note that the United States possesses more than 30,000 nuclear warheads, representing a total destructive force of 25,000 megatons. There is a continuing trend toward an increase in the U.S. nuclear potential, in spite of the fact that existing nuclear weapons, according to statements made by U.S. leaders, are more than enough to destroy the enemy many times over.

Preparations by U.S. and NATO imperialists for nuclear war are also attested by statements made by their official spokesmen. U.S. Deputy Defense Secretary David Packard, discussing prospects of arms development during the coming decade, that is during the seventies, emphasized, states the New York Times, "the extensive growth of nuclear forces with the aim of reestablishing a position whereby the United States would be capable of delivering such a powerful and accurate first strike that the enemy would for all practical purposes be disarmed." A similar trend is confirmed by proposals made by the NATO nuclear planning group, ratified in 1969-1970 by the NATO Council. These proposals are based, as reported in the NATO journal NATO Letter, on the idea of "the inevitability of employment of nuclear weapons in the conduct of war in Europe."

In the effort to consolidate its position, Britain is also placing its cards on nuclear weapons which, in the opinion of British ruling circles, can help it become NATO's European military leader. With this objective in

* From materials in the foreign press.

mind, the British government is initiating the establishment of "European nuclear forces," while the British Isles themselves are being transformed into NATO's European nuclear arsenal.

Major efforts conducted in the United States and other NATO member nations toward further improvement and stockpiling of nuclear, chemical and biological weapons also attest to preparations for the most dangerous crime against mankind -- a world war with weapons of mass destruction.

Nuclear Arms

Soon after the end of World War II an Atomic Energy Commission was established in the United States; one of its principal missions was the development, testing and manufacture of nuclear weapons. At the present time the AEC possesses vast resources and a huge industrial base. In the period 1950-1967 alone the United States spent 40 billion dollars on nuclear arms. Since then these expenditures have not diminished. Even in the so-called "reduced" military budget of 1970 appropriations for strategic missile systems were increased by 500 million dollars. Sums appropriated for new weapons development have hit record highs for the last 10 years. The magazine Military Review states that "the U.S. Army, supported by a highly-developed industry and raw materials base, has a realistic potential for development and maximum expansion of its nuclear arms arsenal and can continue deploying units and subunits for utilization of these weapons."³

It is evident from AEC reports that research and development in the area of nuclear arms are aimed at perfecting nuclear warheads and developing new raw materials for them. This research is concentrated at major laboratories located at Albuquerque, Los Alamos (New Mexico), and Livermore (California). Under laboratory conditions research is being conducted which is aimed at increasing the destructive effects of nuclear explosions. A capability has been developed to employ new materials for nuclear warheads. For example, transplutonium elements with low critical mass can be used to build very small tactical nuclear warheads.

Theoretical research in the fields of nuclear and general physics, hydrodynamics, chemistry, metallurgy, and mathematics have made it possible to improve environment simulation, with the objective of further studying the propagation and effects of nuclear explosions.

The search for ways to achieve further increase in the destructive effects of nuclear weapons is connected with solving the problem of increasing the percentage of utilization of the nuclear energy generated in a burst, and this in turn leads to a reduction in the size and weight of nuclear warheads without diminishing their destructive force. In the future it will be possible to design means of warhead delivery which will be smaller

and lighter in weight than the well-known Davy Crockett system. The development program to produce lighter and smaller nuclear weapons specifies in particular the development of new 105, 155, 175 mm atomic shells and small thermonuclear devices for new types of strategic missile warheads.

Underground nuclear testing is continuing, for the purpose of testing new warhead devices, as well as to study the effect of nuclear bursts on personnel and military installations. In spite of the treaty prohibiting testing in the atmosphere, U.S. test facilities are maintained ready to resume such testing on short notice. This is confirmed by the retention and maintenance of the requisite facilities, measuring equipment, and refresher training for test facility personnel.

The United States is continuing to devote considerable attention to the development of strategic offensive forces, although in 1968 the USSR and the United States reached an agreement to initiate strategic arms limitation talks. During the last 2-3 years the U.S. government has undertaken efforts aimed at further accelerating the development of strategic offensive forces. At the end of 1968 the U.S. made the decision to develop the WS-120A ICBM, which has a range of 12,000 km and can carry a 3100 kg payload. Some Minuteman-1 silos are being modified to accommodate this new missile. Development of the Minuteman-3 missile was completed in 1971; this missile is capable of carrying multiple warheads. It is believed that such a missile can be employed to destroy several targets located at a substantial distance from one another. By the end of 1974 the Minuteman-3 missile is scheduled to replace all 500 Minutemen-1B, and then the Minuteman-2.

At a press conference in 1971 U.S. Defense Secretary Laird stated that the Pentagon intended to request additional funds from Congress for further deployment of these ICBMs. At the same time the new Poseidon-3 missile, with a maximum range of 5000 km, has become operational. This missile carries powerful multiple warheads.

The arming of nuclear submarines with the Poseidon-3 began in 1971. Work is presently in progress to improve them further; in the opinion of American experts this will substantially increase navy combat capability. Recently the American press reported a statement by Laird which indicates that the United States is actively studying the possibility of building a new type nuclear submarine capable of attacking surface units while remaining beyond the effective range of their ASW weapons.

It is planned to build in the eighties nuclear submarines armed with 6000-mile missiles; the maximum range of existing submarine-launched ICBMs is somewhat greater than 3000 miles.

Work is in progress to develop high-thrust nuclear rocket engines, in order to increase missile range and payload. A designed engine, called Nerva, is to produce a thrust of approximately 34,000 kg. It would subsequently be improved, for extensive utilization in spacecraft and rockets.

In the search for ways to increase the survivability of strategic nuclear forces, they are studying the possibilities and feasibility of a shift to mobile systems established in the near future on the basis of the Minute-man missile.

Approximately 2 years ago a decision was made to speed up development of a new strategic bomber; it is scheduled to replace the B-52 strategic bomber in the latter half of the seventies.

Since 1964 Great Britain, on the basis of an agreement with the United States, has been working on a program to develop its own strategic nuclear weapons. In conformity with this program the Polaris-A3 missile is being modified by the addition of a new multiple warhead, which should make it possible, as reported in the press, to keep this missile operational up to the end of the seventies.

Operational-tactical missiles are constantly being refined and upgraded. Advancing the possibility of waging war solely with offensive tactical nuclear weapons, Pentagon leaders are making a great effort to improve their performance characteristics. Plans called for making operational in 1971 the new Lance missile, which was to replace the obsolete Little John, Honest John, and Sergeant missiles. Ground forces of the United States and its allies should be armed with this new missile by 1976.⁴ In view of the fact that the Lance missile can be employed most effectively at ranges of 30-140 km, efforts have been under way to develop a tactical missile with a range to 30-40 km.

Nor should one ignore the factor of the constant endeavor by revenge-seeking circles in West Germany to arm their forces with nuclear weapons; U.S. and NATO military-political leaders are doing everything to assist them in their desires. It is a well-known fact, for example, that the nuclear planning group contains a representative of the FRG. What is more, this group has assigned to operations entities of the FRG and British armies elaboration of all matters connected with employment of nuclear weapons. It has been reported on numerous occasions in the press that with the consent of the United States and NATO shafts have been prepared along the FRG frontier, in which nuclear devices can be placed. Thus the Bundeswehr command has succeeded in planting along the border between the FRG and Czechoslovakia a nuclear minefield, for the purpose of covering powerful friendly offensive forces and creating formidable obstacles in the path of opposing troops. Nuclear landmines are stored at supply depots in

the FRG and can be placed in the ready shafts on a moment's notice.

Plans for the further development of nuclear weapons give appropriate emphasis to research and development for the purpose of perfecting means of detection and determination of the parameters of nuclear explosions. The [Vella] program, being carried out under the supervision of the U.S. Defense Department director of defense research and engineering, is working on the development of special equipment to detect various types of nuclear explosions: underground, in the atmosphere, and in space.

Frightening the American people with stories of a threat of nuclear attack by the Soviet Union, the U.S. government has recently succeeded in obtaining heavy appropriations for constructing an ABM system. The decision to build such a system was made in 1967. The system was refined in 1969-1970 and is being constructed under the designation "Safeguard."

In addition to improvement and further stockpiling of offensive nuclear weapons, ways are being sought to achieve more effective utilization of these weapons, as attested by the large number of military exercises held in the United States and in Europe. Methods of combat operations with and without the employment of weapons of mass destruction are worked on at these exercises. Various factors have influenced the shift to employment of weapons of mass destruction; one of the most important factors is the desire to launch a preemptive nuclear attack.

Chemical Weapons

Aggressive circles in the United States and NATO are also counting heavily on chemical weapons. Concealing their intentions behind statements about the "humaneness" of these weapons, they are devoting considerable attention to perfecting and stockpiling such weapons.

The United States has not yet ratified the 1925 Geneva Agreements which prohibit the employment in war of suffocating and other toxic agents. In addition, since the end of World War II the United States has been undertaking a major reorganization of the chemical warfare service. At the present time the development, manufacture and stockpiling of chemical weapons by the U.S. Army is supervised by a special division which operates approximately 15 research and manufacturing establishments. Testing grounds and laboratories contain hundreds of millions of dollars worth of sophisticated equipment. In addition to the research centers of the U.S. Department of Defense, the research effort involves a large number of civilian higher educational institutions and establishments. Appropriations for chemical weapons research and development total in excess of 300-400 million dollars a year.

Research results are practically applied at plants manufacturing toxic agents. At various times the press has reported the manufacture of the chemical agent Vx at the Newport Chemical Plant, as well as the storage and manufacture of sarin at the Rocky Mountain Arsenal. This same facility contains equipment to construct chemical agent aircraft bombs and warheads for Honest John, Sergeant missiles as well as other ground and air weapons.

The T/O of U.S. Army military units specify chemical service officers from top to bottom.

In addition to the United States, considerable efforts in the area of chemical weapons are being conducted in the European countries, particularly the FRG and Great Britain. There have been numerous reports of toxic substances entering the waters of the Rhine, which attest to the manufacture of toxic agents in the FRG. Quite symptomatic is close collaboration between American chemical weapons centers and West German enterprises -- the successors of IG Farbenindustrie, which manufactured the gas Zyklon B for Nazi concentration camps. There is occurring a very active exchange of various delegations for the purpose of acquaintance with the manufacture of chemical weapons. In particular, it was reported that the Pine Bluff Arsenal was visited by a group of West German generals and other officers, including the Bundeswehr commander of artillery and chief of the army chemical service.

Research being conducted in Great Britain is being kept strictly secret. Very little information is published in the press, while official spokesmen for the government and Ministry of Defense refrain from commenting on this subject. The only official statement issuing from the Ministry of Defense in the last decade, confirming the conduct of experiments determining the effect of neuroparalytic agents on humans, was made in 1960. Although there have been no other official statements since then, there is reason to assume that work in the area of chemical weapons has not ceased. A confirmation of this is the existence of chemical weapons test facilities. In view of the lack of large unpopulated areas in the British Isles, these facilities have been set up in Canada.

The U.S. and NATO arsenal of chemical weapons contains various types of toxic agents, from those which temporarily disable to those which are lethal.

The group of lethal toxic agents includes agents of neuroparalytic, skin-vesicant, asphyxiation and general toxic effect.

In the opinion of U.S. and NATO military leaders, neuroparalytic toxic agents are the most promising. They can be employed for mass annihilation

of personnel. The major agents of this type are sarin and Vx; the former is unstable, while the latter is a stable substance. Since very large quantities of sarin have been stockpiled, its manufacture has been stopped. The manufacture of Vx is continuing. It is apparent from a U.S. Army munitions list that sarin and Vx are extensively employed with various types of artillery shells (105, 155 and 203.2 mm howitzers, 127 and 155 mm guns, 127 mm multiple rocket launchers, which fire 45 rockets simultaneously), and missiles (Honest John, Sergeant, and Lance). They are also employed with chemical mines, aircraft bombs and airplane spray tanks.

Neuroparalytic agents penetrate the human organism through the skin, respiratory and digestive organs, producing paralysis and death. These agents act quickly. One drop of Vx coming into contact with the victim's skin is fatal.

The Armed Forces of the United States, Great Britain, France, Italy, Canada, and other capitalist countries have neuroparalytic war gases in their arsenals.

The principal skin-vesicant toxic agent is mustard gas. Although less lethal than sarin and Vx, on the whole it is an extremely effective war gas, which strongly affects troop combat capability. Mustard gas can be stored for long periods of time without breaking down.

Psychochemical-effect toxic agents temporarily disable the victim. Personnel exposed to these agents become physically or mentally incapable of combat for several hours or even days. A typical psychochemical agent is LSD. It causes optical and auditory hallucinations and perception disturbance which last up to 24 hours and more, as well as a state similar to schizophrenia. The most widespread substance in this group is BZ, which causes headache, nausea, dizziness and abrupt loss of mental equilibrium.

So-called crowd-control agents include CS, which is a powerful lacrimator and irritant, as well as phenacyl chloride and adamsite.

It is evident from a cursory examination of the effects of the above-enumerated toxic agents that the U.S. and NATO armies possess highly effective agents capable of producing mass military and civilian casualties. But this does not satisfy the Pentagon and NATO leaders. On their orders research is continuing, with the aim of improving existing and developing new types of toxic agents. First and foremost one observes an effort to develop agents capable of striking persons equipped with individual protective gear. Natural poisons in particular are employed toward this end, poisons which are hundreds and thousands of times more toxic than sarin. Development of nonlethal toxic agents is proceeding in the direction of new, powerful substances which produce irritation of the eyes

and respiratory passages, which produce temporary mental disturbance, as well as loss of vision, hearing, etc.

The existence of a large arsenal of toxic agents and continuing development efforts suggest the conclusion that U.S. and NATO leaders are preparing for the utilization of chemical weapons which, in their view, may occur both in a nuclear and nonnuclear war.

The general aim in utilization of chemical weapons is formulated in U.S. Field Manual FM3-10, Chemical and Biological Weapons Employment (1966 edition). They are expressed as follows: "Employment of chemical agents aims at influencing combat operations by causing injury to or threatening injury to enemy personnel." This same manual formulates the specific missions and objectives of employment of various types of chemical agents. Sarin is prescribed when the objective is to hit by surprise personnel without gas masks. The chemical agent Vx is employed when enemy personnel are situated in shelters and have gas masks.

U.S. Field Manual TM3-125 recommends that psychochemical agents be employed with the aim of introducing confusion among defending or counterattacking troops, and with the aim of affecting important control centers at critical moments in combat. The effect of such chemical agents on combat is discussed in a book by Rothschild, in which the author states that "under the effect of LSD a commander loses the ability to make logical, rational decisions and to issue clear orders. Coordination is disrupted."⁵

Similar tasks are performed by the so-called crowd-control agents, which have been widely employed in Vietnam. Although American propaganda attempts to demonstrate their harmlessness, facts indicate precisely the opposite. It was recently stated at a press conference in Hanoi that in the period 1969-1970 alone U.S. aircraft applied chemical agents to a total of 1,836,950 hectares in South Vietnam, as a result of which 850,000 persons suffered from poisoning, hundreds of whom died. During the first 9 months of 1970 alone, 415,000 hectares of land were rendered unusable. According to figures of the American Association for the Advancement of Science, one seventh of South Vietnam has been turned into useless wasteland as a result of employment of chemical agents.

The American press has also reported employment of CS against personnel taking shelter in tunnel complexes, as well as the spraying of CS from helicopters over difficult-access terrain where the presence of patriot troops was suspected. Specific examples are given of employment of CS against a popular liberation army headquarters and fortified positions in combination with artillery fire, as well as in the execution of other missions.⁶

The U.S. and NATO armies possess the most diversified means of delivering chemical agents. The air force has aircraft chemical bombs and aircraft spray tanks for the delivery of all types of chemical agents, including lethal agents. Ground troops are armed with missile chemical warheads and chemical artillery shells, while naval forces possess chemical projectiles for 127 mm naval guns and 48-tube rocket launchers.

Biological Weapons

Since World War II biological weapons development has taken place chiefly in the United States, Great Britain, and Canada. Although this research is being kept much more secret than efforts in the area of chemical weapons, the press and statements by certain officials have indicated that such activities have not been stopped.

In a book entitled Weapons of Tomorrow by D. Rothschild, published in 1965, the author lists in a systematized manner the results of numerous research projects in the area of biological weapons and on the basis of these results offers conclusions on the methods of employment of such weapons in war. A book by S. Hirsch, published in 1969, synthesizes a great quantity of factual material on development of the U.S. chemical-bacteriological potential. The author shows the great scale of effort in the area of chemical and biological weapons and discusses the major research facilities in the United States and other NATO countries, as well as plans for employment of these weapons in war.

Such a wealth of material could be acquired only on the basis of large-scale studies requiring considerable time and money. An abrupt increase in appropriations at the beginning of the sixties made it possible to recruit various research centers and universities to work in the area of biological weapons. As a result of this, as is noted in U.S. Army Technical Manual TM3-216, it has been possible to produce many disease pathogens which had been impossible to produce in the past.

The U.S. Army now possesses three basic types of biological agents: for use against humans, animals, and plants. They can be subdivided into two groups: with a short incubation period (plague, anthrax, tularemia, cholera, encephalitis, spotted fever), of 1-3 days, and a long incubation period, of a week or more (smallpox, brucellosis, typhus, Q fever). Such bacterial agents as pneumonic plague, anthrax, and yellow fever frequently are fatal.

In view of the length of the incubation period, the pathogens of the first group can be more effectively employed against troops in combat, and those of the second group against the population of large cities and other strategic targets. With the employment of biological agents in combination with chemical weapons, pathogens of the first group would be employed simultaneously or later, while those of the second group would be employed

earlier. In this latter case it is possible that biological agents would be introduced by acts of sabotage before the outbreak of war, in order that mass affection of military personnel and civilians break out at the moment war is initiated.

It follows from an analysis of the properties of biological weapons that the principal purpose of such agents is the mass affection of military personnel and the civilian population, both to render them disabled and to produce a powerful psychological effect.

One reads in U.S. Army Field Manual FM3-10, Chemical and Biological Weapons Employment, that "biological agents are employed primarily against enemy personnel. However, manpower in the broader sense might also be a target, which would include military personnel and the civilian population... Biological agents producing a fast combat effect, that is quickly producing fatal or disabling affections must be employed against hostile troops on the battlefield." It is most probable that pathogens with a short incubation period will be employed for these purposes.

Various manuals recommend the employment of biological weapons both by means of overt and covert biological attack on the enemy. The basic and most effective method is the spraying of biological agents into the air and the consequent creation of a biological aerosol. This technique in the first place can infect large areas and in the second place accomodates utilization of vehicles for the delivery of nuclear and chemical weapons. We should also note that the protection of personnel becomes more difficult with the aerosol method: aerosol particles can enter the system through the respiratory organs; they can penetrate buildings, other structures and vehicles which are not airtight-sealed, together with the air.

Biological agents will be delivered to the target by aircraft, warship, submarine, balloon or rocket. Agent atomization would be effected with the aid of detonation-type devices (bombs, cluster bombs, rockets, artillery shells, mines), as well as special spray devices mounted on airplanes, rotary wing aircraft, and trucks. Many of the above devices have already been developed, while others are presently under development. It has been reported in the American press, for example, that there is a device which can be mounted on existing reconnaissance drones for the delivery of biological agents, and that the U.S. Armed Forces have an aircraft automatic spray unit designed to be wing-mounted on the F-100, F-105 and F-4C aircraft. The latter has been used by the Americans in South Vietnam.

In 1967 an aircraft liquid spraying unit was tested. Reports indicate that there is a container which could easily carry biological agents and be released over specified target areas. In March 1967 scientists at Fort Detrick completed a development program to produce a warhead for the Sergeant missile, carrying biological agents. Official documents, and in

particular the above-mentioned U.S. Army Field Manual FM3-10, indicate that there are such warheads available for other missiles as well. This field manual, in contrast to the 1962 edition, not only states the fact of biological agent ammunition in the arsenal of the U.S. Army but also specifies the procedures for supplying line units with these items. The basic supply plan calls for temporary storage of such items at depots located in the United States, their transport to overseas bases and transfer to the appropriate services.

Research conducted for the purpose of further perfecting biological weapons is aimed at developing even more effective disease pathogens which are more resistant to medical treatment, various environmental factors and which contain several types of pathogens.

* * *

Such are the state of and development prospects for weapons of mass destruction in the major NATO nations. It is apparent from the above that the United States and other capitalist countries have embarked upon an ambitious program aimed at further improving the quality and increasing the quantity of weapons of mass destruction. The scale of efforts in this area and the rate at which these weapons are being added to the arsenals of the NATO nations are assuming an alarming character. The imperialist states are creating tension points in various parts of the world, engaging in overt brigandage and violation of international law and treaties.

Bearing in mind the great danger imperialism constitutes to peace and mankind as a whole, the Soviet Union is taking all steps to ward off aggression. The Communist Party of the Soviet Union is carrying out Lenin's behest not to forget for a single moment the predatory nature of imperialism, its hatred toward the Soviet system, and is tirelessly increasing our nation's defense capability.

We presently possess the necessary capability for reliable defense of the conquests of Communism. We do not forget for a single moment, however, that imperialism is continuing the arms race and is strengthening military blocs aimed against the socialist countries and the popular liberation movement. Under these conditions a strengthening of the might of the Soviet Union and the other socialist nations and an increase in the vigilance and combat readiness of their armed forces constitute an objective necessity dictated by the interests of defending the conquests of socialism.

The Soviet Armed Forces, constantly improving their combat skills, are ever prepared to carry out their patriotic and international duty together with

the fighting men of the Warsaw Pact member nations -- to defend the peaceful labors of the peoples of the Soviet Union and the entire socialist commonwealth, to constitute a bulwark of peace and security of all peace-loving peoples.

FOOTNOTES.

1. Military Balance, 1968-1969, London, page 16.
2. Problemy Mira i Sotsializma, No 3, 1971, page 41.
3. Military Review, October 1969.
4. Soldat und Technik, No 10, 1970.
5. D. Rotshil'd: Oruzhiye zavtrashnego dnya (Tomorrow's Weapons), Voenizdat, 1966.
6. Army Digest, November 1968.
7. S. Khersh: Khimicheskoye i biologicheskoye oruzhiye (Chemical and Biological Weapons), Voenizdat, 1970.

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